

DEPARTMENT OF THE INTERIOR.

REPORT

OF THE

SURVEYOR GENERAL

OF

DOMINION LANDS

FOR THE

YEAR ENDING JUNE 30,

1904

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REPORT OF THE SURVEYOR GENERAL.

DEPARTMENT OF THE INTERIOR,
TOPOGRAPHICAL SURVEYS BRANCH,
OTTAWA, October 31, 1904.

JAMES A. SMART, Esq.,
Deputy Minister of the Interior,
Ottawa.

SIR,—I have the honour to submit the following report upon the operations of the Topographical Surveys Branch for the twelve months ending June 30, 1904.

DESCRIPTION OF THE WORK.

The survey of townships for settlement constitutes the most important part of the work of the Topographical Surveys Branch. Two classes of survey parties are employed. In one class the surveyor and his men are paid by the day; in the other class, the surveyor contracts to make the survey at certain rates per mile of line surveyed, such rates being proportional to the difficulties of the survey. Before a township is subdivided, its boundaries or exterior outlines are marked on the ground; then the subdivider, usually a contractor, establishes the boundaries of the sections or section lines. The next step is to survey the lakes or rivers in the township for ascertaining the area of the fractional quarter-sections fronting on such lakes or rivers. This kind of survey is called a 'traverse.' The same designation is applied to the survey of roads, settlers' improvements, &c. Work in townships includes also the restoration of obliterated lines, or lines which have nearly, although not entirely, disappeared, the resurvey of lost lines, or lines which have entirely disappeared, and the retracement of erroneous lines made for the purpose of plotting correct plans of these lines. The three kinds of surveys are grouped together in this report under the general designation of 'resurveys.'

SURVEYS OF 1903.

Five hundred and thirty-five whole townships and eighteen fractional townships were completely subdivided during the calendar year 1903, while sixty-six townships were partially subdivided. There were also sixty-one townships completely resurveyed and twenty-eight partially resurveyed during the same time. Sixty-nine survey parties were employed, sixty-six being engaged on township surveys and three on other surveys. Of the parties employed, sixteen were paid by the day and fifty-three were working under contract. Two of the parties under daily pay were located in Manitoba, eleven in the North-west Territories and three in British Columbia. The fifty-three contractors were all engaged in the North-west Territories on township subdivision surveys. The sixteen parties under daily pay were distributed as follows:—

1. W. A. Ducker.—Outlines in southeastern Manitoba.
2. C. F. Aylsworth.—Subdivision and other surveys in western Manitoba.
3. P. R. A. Belanger.—Resurveys north of Qu'Appelle, Assiniboia.

- 4. A. Saint Cyr.—Outlines north of Battleford, Saskatchewan.
- 5. J. J. Dalton.—Outlines and other surveys near Fort Pitt, Saskatchewan.
- 6. J. K. McLean.—Outlines north of Edmonton, Alberta.
- 7. G. J. Lonergan.—Resurveys near Edmonton, Alberta.
- 8. E. W. Hubbell.—Resurveys south of Edmonton, Alberta.
- 9. J. N. Wallace.—Outlines west of fifth meridian, Alberta.
- 10. L. E. Fontaine.—Subdivision in southern Alberta.
- 11. J. E. Ross.—Subdivision eastern British Columbia.
- 12. J. A. Kirk.—Subdivision near Revelstoke.
- 13. A. W. Johnson.—Subdivision in western British Columbia.
- 14. A. S. Weeks.—Assistant Inspector of Surveys.
- 15. C. E. Bourgault.—Assistant Inspector of Surveys.
- 16. A. O. Wheeler.—Topographical Survey in the Rocky Mountains.

The contract surveys were executed under the direction of Messrs. William Pearce, Chief Inspector of Surveys, and Thomas Turnbull, Inspector of Surveys. Each had a surveyor and a party to assist in inspecting the surveys.

The work of the parties engaged on township surveys in 1903 is given below; for the purpose of comparison, the figures for 1902 have been added. The latter differ slightly from those published in the report for 1902, the present figures including all the parties employed on township surveys :—

	1903	1902
Number of parties.. . . .	65	37
Township outlines.. . . . Miles	833	1,919
Section lines.. . . . “	25,982	5,867
Traverse.. . . . “	4,050	1,282
Resurvey.. . . . “	5,390	3,269
	<hr/>	<hr/>
Total for the season.. . . . “	36,255	12,337
Average per survey party.. . . . “	558	333

The increase in the average work per survey party from 333 miles in 1902 to 558 miles in 1903 is accounted for by the nature of the country surveyed; it was more or less wooded in 1902, while in 1903 a considerable portion was bare prairie. The rains, floods and high water of 1902 also interfered with the progress of the operations.

The work of the surveyors under daily pay and of the contractors compares as follows :—

Work of P. R. A. Belanger (paid by the day).

	1903.	1902.
Resurveys.. . . . Miles	3,100	2,878
Section lines.. . . . “	28	
Traverse.. . . . “	6	

Work of parties under daily pay.

	1903.	1902.
Number of parties.. . . .	12	17
Township outlines.. . . . Miles	632	1,214
Section lines.. . . . “	478	1,188
Traverse.. . . . “	236	489
Resurvey.. . . . “	497	374
	<hr/>	<hr/>
Total for the season.. . . . “	1,843	3,265
Average per survey party.. . . . “	154	192

SESSIONAL PAPER No. 25a

Work of parties under contract.

	1903.	1902.
Number of parties..	52	19
Township outlines.. Miles	201	705
Section lines.. "	25,476	4,679
Traverse.. "	3,808	793
Resurvey.. "	1,793	17
Total for the season.. "	31,278	6,194
Average per survey party.. "	601	326

Particulars of the work of every surveyor are given in schedule form in Appendix No. 3 to this report. Leaving out Mr. P. R. A. Belanger, whose work consisted almost entirely of resurveys, the most striking feature of the schedule is the large difference in cost between day and contract work. This difference is further illustrated by the figures given above for the output of survey parties, an average of 192 and 154 miles for a party under daily pay against 326 and 601 miles for a contractor. It must, however, be borne in mind that the surveys executed are not of the same character. The surveyor under daily pay establishes the bases or governing lines of the Dominion lands system, which require to be located with more care and accuracy than can be expected from a contractor. He sub-divides the lands in the mountains, and, generally, makes all surveys which, owing to peculiar difficulties, cannot be given out under contract at fixed rates. Such surveys are naturally expensive: even if it were possible to have them executed under contract, the cost would be higher than the figures found in the schedule for contract work. However, it is plain that the contract system is the most economical, and as a general rule, every survey is given out under contract unless special reasons exist for having it executed otherwise.

The topographer of the department, Mr. A. O. Wheeler, has completed the survey of the Selkirk Range. His report is in course of publication, and his map is being engraved. He is now doing the same work in the Rocky Mountains and Yoho parks as in the Selkirk Range.

SURVEYS OF 1904.

A remarkable change is apparent in the perfection and accuracy of the surveys: it is mainly due to the improved methods prescribed for the guidance of surveyors in the revised edition of the Manual of Survey issued last year. It is to be noted that the amelioration has taken place notwithstanding the enormous amount of work accomplished and the difficulty of exercising an efficient control over operations of such magnitude.

The weather has generally been favourable for surveying, although some delay was caused in the spring by the floods in the Saskatchewan and Qu'Appelle rivers, and the interruption of the service on the Prince Albert branch of the Canadian Pacific Railway.

The surveyors were under the direct management and control of this office. An efficient system of inspection of the survey contracts was organized, four inspectors, each with a small party, being employed for that purpose. The inspectors have to see that the lines are established correctly and the survey monuments properly built; they also collect sufficient information for controlling the accuracy of the contractors' field notes and for checking their accounts. The importance of this check, with rates varying from \$6 to \$38 per mile, cannot be overestimated.

Prior to July 1, 1904, seventy-five survey parties were at work, seventy being engaged on township surveys and five on other surveys. Of the parties employed, twenty-one were paid by the day and fifty-four were working under contract. Forty-eight of the contracts were for the sub-division of townships in the Northwest Terri-

4-5 EDWARD VII., A. 1905

tories, the remaining six being in the Province of Manitoba. The twenty parties under daily pay were distributed as follows:—

1. W. A. Ducker.—Survey of township outlines in southeastern Manitoba.
2. C. F. Aylsworth.—Subdivision and miscellaneous surveys in central Manitoba.
3. L. T. Bray.—Resurveys in southern Manitoba.
4. P. R. A. Belanger.—Restoration surveys in Assiniboia, northeast of Qu'Appelle.
5. J. J. Dalton.—Miscellaneous subdivision surveys in southern Alberta.
6. G. J. Lonergan.—Renewal surveys in Edmonton district.
7. E. W. Hubbell.—Renewal surveys southwest of Edmonton.
8. J. K. McLean.—Outlines north of Edmonton.
9. L. E. Fontaine.—Outlines in northern Alberta.
10. Edgar Bray.—Outlines northwest of Edmonton.
11. A. Saint Cyr.—Outlines in Peace River district.
12. J. N. Wallace.—Outlines in Peace River district.
13. H. W. Selby.—Outlines in Peace River district.
14. J. E. Ross.—Subdivision near Kamloops, British Columbia.
15. A. W. Johnson.—Subdivision near Harrison Lake, British Columbia.
16. J. A. Kirk.—Subdivision near Revelstoke.
17. J. D. Craig.—Inspector of Surveys, eastern section.
18. E. H. Phillips.—Inspector of Surveys, south of Battleford.
19. T. S. Nash.—Inspector of Surveys, eastern Alberta and Onion Lake district.
20. G. H. Watt.—Inspector of Surveys, Edmonton and Calgary district.
21. A. O. Wheeler.—Topographical survey in the Rocky Mountains.

Besides the parties enumerated above, a few surveyors are on the local staff of the Yukon Territory; they receive their instructions from the commissioner of the territory, but are paid out of the appropriation for Dominion land surveys. The same remark applies to the surveyors employed on irrigation surveys under the direction of the Deputy Commissioner of Public Works of the Northwest Territories.

DESCRIPTION OF TOWNSHIPS.

Descriptions of townships in which surveys have been made during the year 1903 have been compiled from the surveyor's reports, and are given as Appendix No. 11. For convenience of reference the descriptions have been arranged by townships and ranges.

RATE FOR SUBDIVISION SURVEYS.

When explaining in last year's report that a new schedule of rates for the payment of surveys executed under contract had been adopted, it was pointed out that the classification being entirely new and somewhat complicated, it might be expected that experience would show the necessity of amendments. The changes were actually less than anticipated, and the principle of the new classification has proved to be correct.

After one year's trial, every contractor was requested to express his opinion, to state his objections and to suggest amendments. A perusal of their replies shows that apart from the deficiencies inherent to the system of contract surveys, and for which it is impossible to provide, the new classification is as nearly perfect as it is possible to make it, and that most of the surveyors are well satisfied with it. Of course, some surveyor will always be found who through bad management or incompetence will fail where others are realizing large profits; no system of rates that can be adopted will provide against such contingencies.

MANUAL OF SURVEY.

The first manual of instructions for the guidance of Dominion land surveyors was published in 1871 by Col. J. S. Dennis, then Surveyor General. The two following

SESSIONAL PAPER No. 25a

editions in 1881 and 1883 were compiled by the undersigned. The next edition, issued in 1892, was a revision prepared under instructions of the deputy minister by the chief astronomer, Mr. W. F. King, and the Chief Inspector of Surveys, Mr. J. S. Dennis. The last edition, prepared by the undersigned, was issued in 1903, and is fully referred to in last year's report. Many important changes having been made in the methods hitherto in use, it was found after one year's experience that a few details had been overlooked, and that the manual might be further improved by some slight amendments. These amendments were issued at the beginning of 1904.

Convenient astronomical tables have been printed in this office for the use of surveyors in the field. They are on a single sheet of strong paper, 15 x 6 inches, folding to 3 x 6 inches for the pocket, and contain all the data necessary in subdividing townships. Through the use of these tables in connection with the new pattern of transit theodolite supplied by this office, the astronomical work of the surveyors has become exceedingly simple, and they can afford to observe frequently without interfering with the progress of the survey. The folder contains a table for finding the pole star and the astronomical meridian, a list of time stars, a table of the sun's apparent right ascension at Greenwich apparent noon, a small map showing magnetic bearings of astronomical north in western Canada, and diagrams showing at a glance the latitude, longitude and convergence of meridians for any township or range.

OFFICE WORK.

A number of changes have taken place in the staff of the branch. In the Metcalfe street office Miss J. W. Barrie, stenographer and typewriter, has resigned, and Miss G. B. Campbell has been appointed in her place. F. T. Ellis has been appointed as messenger. Messrs. J. D. Craig, D.L.S., G. H. Watt, D.L.S., E. H. Phillips, D.L.S., and T. S. Nash, D.L.S., are in charge of parties in the field, inspecting surveys made under contract. Mr. P. W. Currie, D.L.S., has been transferred to the survey records office, Mr. N. B. Sheppard to the patents branch, and Mr. John Macara to the office of the chief astronomer. Messrs. M. L. Gordon, D.L.S., G. A. Grover, D.L.S., and R. H. Knight, D.L.S., have resigned to take survey contracts. The following are acting temporarily as assistants to surveyors: J. C. Baker, E. L. Burgess, T. H. G. Clunn, F. G. D. Durnford, John Empey, C. C. Smith, A. G. Stacey and J. E. Umbach. Messrs. E. B. Bolger, F. J. Hethrington, F. H. MacLaren, A. L. MacNaughton, R. H. Montgomery and N. J. Ogilvie have left the office. The additions to the staff during the year are: E. M. Dennis, B. Sc., J. V. Dillabough, Grad. School of Mining, Kingston; G. B. Dodge, late of the Admiralty survey of Newfoundland; A. J. Elder, H. Fitzsimons, M. L. Gordon, Grad. of Royal Military College; S. N. Hill, B. T. Horsey, H. G. Jackson, B. Sc., R. H. Knight, B. A. Sc., F. H. Mackie, B. Sc., F. A. Moore, Grad. School of Practical Science; J. P. McCormick, S. S. McDiarmid, B. Sc., G. G. McNab, M.A., D. H. Philp, Grad. School of Practical Science; D. F. Robertson, Alec. Roger, G. S. Roxburgh, I. J. Steele, Grad. School of Practical Science, and E. E. D. Wilson. Jas. Bennie, R. J. Craig, Robt. Fraser, S. J. Gagnon, J. P. McElligott and Chas. J. Wood have been added to the staff of the geographer. G. Beeson, J. D. Blais and G. J. H. Lemaitre have resigned from the lithographic office; A. Kilmartin and R. Moore have been transferred to the photographic office, and A. Groulx to the office of the chief draughtsman. Besides the two employees transferred from the lithographic office, A. L. Devlin has been appointed to the photographic office. Mr. F. Clayton, formerly clerk in charge of the survey records office, died in 1903, and Mr. C. J. Steers has taken his place. Mr. P. W. Currie, D.L.S., was appointed as his assistant, and Mr. E. J. Bolger has been added to his staff.

Mr. Clayton had been in the service since 1872, for several years as clerk in charge of the general work of the draughting office, including the examination of surveyors' returns, &c., and afterwards as keeper of survey records, although a large amount of

4-5 EDWARD VII., A. 1905

miscellaneous work was also placed under his direction. In view of his intimate knowledge of the surveys from almost their inception, retained by an unusually accurate memory, of his good business habits and sound judgment, his death is a serious loss to the staff of the department.

CORRESPONDENCE AND ACCOUNTS.

The correspondence consisted of:—

Letters received.	10,645
Letters sent.	11,312

The accountant's records show:—

Number of accounts dealt with.	776
Amount.	\$705,202.66
Cheques forwarded.	2,383

The staff consists of one correspondence clerk, one accountant, two stenographers and typewriters and two messengers.

OFFICE OF THE CHIEF DRAUGHTSMAN.

A schedule of the work of the chief draughtsman's office is given as Appendix No. 7. He reports as follows:—

The work done during the year is considerably in excess of that of last year. The increase of field work means a corresponding increase in the office work. For instance, the number of township subdivision surveys examined during the past twelve months is four times the number given in last year's report. The number of township plans completed for printing is over twice as great as last year, which increase also appears in the number of proofs of township plans examined. The outline sketches prepared for the information of the surveyors in the field are over 300 in excess of those prepared last season. Almost twice as many progress sketches were received from the surveyors, and the same increase has taken place in the number of statutory declarations of settlers sent in by surveyors. The number of field books and plans received from the record office and used in connection with office work is also greatly in excess of last year, having almost reached the two thousand mark.

About 950 requests for information were received and dealt with. They referred to a great variety of subjects, such as application for surveys, resurveys or restoration of obliterated lines, for areas and descriptions of parcels of land, questions as to boundaries and the monuments thereon, &c., &c.

The returns of survey of 55 lots in the Yukon Territory were received and confirmed. There were also received 26 plans representing surveys of public roads and of base lines, connecting together different groups of lots in the Yukon Territory. Lists of these surveys are given in Appendices 5 and 6.

The sectional maps on a scale of two miles to an inch have been kept up-to-date as new surveys were completed. These maps now cover almost the whole of the country where surveys have been made and where settlement is taking place. New additions of these maps on a scale of three miles to an inch have been issued after surveys in the districts were completed, or when the previous editions were exhausted. The sheets issued were: Wood Mountain, Tramping lake, Sullivan lake, Sicamous, Regina, Winnipeg, Calgary, Edmonton, Peace hills, Spillmacheen, Lytton, Cypress, Turtle mountain, Bad hills, Sounding creek, Swift Current, Shell river, Portage la Prairie, Brandon, Moose mountain, Rosebud, Manitoba House, Morley, Fairford, Riding mountain, Fort Alexander, Swan river, Saddle lake and St. Ann. Total number, 29.

The staff of the office at the end of June consisted of the chief draughtsman and fifty draughtsmen. The staff is still divided, part of it being in Orme's block on Sparks

SESSIONAL PAPER No. 25a

street and the remainder in the building at the corner of Metcalfe and Slater streets. Besides the staff mentioned, twelve of our men are in the field, four acting as inspectors of surveys and eight as assistants to outline surveyors. Most of these men are expected to come back on the office staff when the season's operations in the field are over.

The system of examining returns of survey and of plotting the plans, which is now in use is a departure from the method used prior to 1903. Until that time the surveyor was required to send in field notes and corresponding plans. These were examined and returned to the surveyor for correction or for additional information. After being returned by him to this office they were re-examined, and if found satisfactory they were sent back to him to be sworn to. This procedure in most cases was the cause of much delay in the approval and confirmation of the survey. The present practice in dealing with subdivision surveys is briefly as follows: Surveyors are required to send in at least once a month a report of their work, accompanied by sketches of every township surveyed. The progress sketch of a township now shows the lines surveyed, with their chainage and bearings, and the lakes which have been traversed. It indicates also the quarter sections which do not contain the full area of 160 acres. This sketch is sent in as soon as the work is completed. After its receipt here, advances on account of the survey up to 75 per cent of the total amount earned are made if the sketch supplies the requisite information and shows no mistakes in the survey. If the sketch is not satisfactory it is sent back to the surveyor, with a request for corrections or additional information. From these sketches the preliminary plans are made, one copy of which goes to the Patents branch of the department and one copy to the Dominion lands agent of the district in which the township lies. The land in the township, with the exception of the quarter sections broken by lakes or traversed rivers, is then available for homestead entry. The surveyor sends in a copy of his field notes of a township as soon as convenient, making affidavit to their correctness. The field book after being entered in the register is given a cursory examination in order to determine whether and glaring errors or omissions have been made, and if anything very wrong is found the field book is at once returned to the surveyor for correction. The astronomical observations for the determination of the bearings of surveyed lines in a township are given in the field book of the township. These are carefully checked during the cursory examination to see that the bearings given in the notes agree with the result of the observations. After the cursory examination, the account given in the field book is examined; if found correct a further advance on account of the cost of the survey is authorized. An exhaustive examination of the field notes is next made, a rough plan of the township on a scale of 30 chains to an inch being plotted at the same time. A memorandum of the errors, omissions or discrepancies found is now sent to the surveyor, with a request for further information. On receipt of his reply, the corrections which he indicates are made in his field book. Then from the rough plan a copy on the same scale is carefully drawn for photozincography. It is reduced by photography to a scale of 40 chains to an inch, and transferred directly to the zinc plate, from which the plan is printed.

Township plans give the areas of whole quarter-sections to the nearest acre. The areas of quarter-sections broken by lakes or large rivers are given in legal subdivisions to the nearest tenth of an acre. The plans show the lengths and bearings of all section lines and the nature of the monuments placed at the corners.

These changes in the office practice have had many very desirable results. The lands surveyed are made at once available for settlement. Greater accuracy is secured in plotting the surveys and calculating the areas. The plans are uniform; they contain all the information necessary for defining exactly the limits of each portion of land and the manner in which they are marked on the ground.

PHOTOGRAPHIC OFFICE.

A statement of the work executed is given as Appendix No. 9 to this report; it shows a total of 5,356 prints and negatives against 3,608 last year. Photography is

4-5 EDWARD VII., A. 1905

now used for reducing to the scale of the township plans the surveys of lakes and rivers furnished by the surveyors with their field notes; the reductions are employed for plotting the township plans. Formerly these surveys were reduced by means of the pantograph; the employment of photography has resulted in a great saving of time and labour.

The staff consists of one photographer in charge, one photo-lithographer and photo-engraver, two photographers and three assistants.

LITHOGRAPHIC OFFICE.

The substitution of photo-zincography for photo-lithography, mentioned in last year's report, has been completed. Township plans were formerly printed in four, five and six colours; to print the 490 plans issued during the year would therefore have involved the preparation of 2,500 stones. This was more than the office could undertake, and would have required a very large establishment. With photo-zincography the 490 plans were printed without difficulty; several times that number could have been printed without overtaxing the office. The process consists in sensitizing a thin sheet of zinc and exposing it under a negative. After development, it is rolled with printing ink, stretched on an iron frame and placed in the press. It is printed from like a lithographic stone. The method has proved extremely convenient here; the results are not quite perfect, but they will improve when we become better acquainted with the details of the process.

A statement of the work executed is given as Appendix No. 10 to this report; it shows 81 maps printed, against 74 last year and 490 township plans against 219 last year.

The staff consists of one foreman, one transferrer, one power press printer, one stone polisher and two autographers.

BOARD OF EXAMINERS FOR DOMINION LAND SURVEYORS.

The number of candidates for examination, both for the preliminary examination previous to being articled as pupil and for the final examination, shows a considerable increase. The large amount of survey work carried on during the last two seasons is attracting young men into the profession. Thirty-seven passed the preliminary and fourteen the final examination.

The regular meeting of the board was held as directed by clause 101 of the Dominion Lands Act on the second Monday in February, 1904, and following days, and special meetings were held from the 4th to the 10th May, on the 9th June, and from the 16th to the 21st June.

The regular examinations were held at the time of the meeting in February. Special examinations were also held as follows: From February 9 to 16, at Vancouver, by E. B. Hermon; April 23 to 27, at Ottawa, by the Surveyor General; April 25 to May 3, at Winnipeg, by Mr. J. L. Doupe, and on May 2, at Toronto, by Prof. L. B. Stewart.

The following candidates successfully passed examinations before the board:—

Preliminary Examination for Admission as Articled Pupil.

H. G. Barber, Ottawa, Ont.
J. E. Morrier, Ottawa, Ont.
D. H. Nelles, Ottawa, Ont.
G. McMillan, Ottawa, Ont.
J. Waldron, Pine Grove, Ont.
F. H. Mackie, Welland, Ont.

S. N. Graham, Kingston, Ont.
P. Gillespie, Toronto, Ont.
W. M. Edwards, Iroquois, Ont.
J. Parke, Oil City, Ont.
F. B. Reid, Bowmanville, Ont.
H. L. Chilver, Walkerville, Ont.

SESSIONAL PAPER No. 25a

J. L. R. Parsons, Toronto, Ont.
 J. E. Umbach, Ottawa, Ont.
 A. Prevost, Ottawa, Ont.
 S. Farley, Tetreauville, Que.
 R. D. Wilson, Winnipeg, Man.
 A. Findlay, Winnipeg, Man.
 F. R. Smith, Ingersoll, Ont.
 A. Thomson, Bendall, Ont.
 C. L. Coulson, Welland, Ont.
 D. H. Philp, Ottawa, Ont.
 P. C. Coates, Victoria, B.C.
 E. Wade, Welland, Ont.
 D. A. Smith, Claude, Ont.

A. J. Campbell, Collingwood, Ont.
 U. W. Christie, Chesley, Ont.
 J. D. Shepley, Leamington, Ont.
 J. V. Dillabough, North Williamsburg,
 Ont.
 J. G. McMillan, Toronto, Ont.
 J. C. Gardner, Niagara Falls, Ont.
 W. N. Moorhouse, Toronto, Ont.
 F. A. Moore, Toronto, Ont.
 T. H. Plunkett, Meaford, Ont.
 G. G. McNab, Kingston, Ont.
 A. C. Garner, South Qu'Appelle, Assa.
 M. Kimpe, Regina, Assa.

Final Examination for Commission as Dominion Land Surveyor.

H. Bigger, O.L.S., Ottawa, Ont.
 W. B. Anderson, O.L.S., Ottawa, Ont.
 D. D. James, O.L.S., Toronto, Ont.
 M. L. Gordon, Ottawa, Ont.
 R. Knight, Ottawa, Ont.
 T. S. Nash, Ottawa, Ont.
 G. A. Grover, Ottawa, Ont.

H. H. Moore, Toronto, Ont.
 J. G. Cummings, P.L.S., Kingston, Ont.
 C. Harvey, Toronto, Ont.
 F. C. Swannell, P.L.S., Victoria, B.C.
 A. Taylor, P.L.S., Winnipeg, Man.
 J. E. Beatty, Sarnia, Ont.
 J. D. McLennan, Ottawa, Ont.

Bonds for the sum of one thousand dollars each, as required by clause 115 of the Dominion Lands Act, were received from ten candidates who had passed the necessary examination for commissions as Dominion land surveyors; eleven commissions were issued. Every Dominion land surveyor is required by clause 125 of the Dominion Lands Act to be in possession of a subsidiary standard of length furnished by the secretary of the board of examiners. Fifteen such standards were issued to surveyors during the year. Twelve standards were also supplied to the British Columbia government for issue to provincial surveyors. A list of surveyors who have been furnished with standard measures to June 30, 1904, will be found in Appendix No. 4.

In order to provide for the examination of candidates at Vancouver, B.C., Mr. E. B. Hermon, Dominion land surveyor, was appointed by Order in Council of January 21, 1904, a special examiner under sub-clause 5 of clause 101 of the Dominion Lands Act. Mr. J. L. Doupe, Dominion land surveyor, of Winnipeg, Man., was also appointed a special examiner by Order in Council dated March 30, 1904.

Examination papers are submitted as Appendix No. 21.

The correspondence of the board amounted to:—

Letters received.	557
Letters sent.	543

APPENDICES.

The following documents are appended:—

No. 1.—Schedule of Dominion land surveyors employed, and work executed by them, from July 1, 1903, to December 31, 1903.

No. 2.—Schedule of Dominion land surveyors employed, and work executed by them, from January 1, 1904, to June 30, 1904.

No. 3.—Schedule showing for each surveyor employed during 1903, the number of miles surveyed of township subdivision lines, township outlines, traverses of lakes and rivers and resurvey, also cost of the same.

No. 4.—List of Dominion land surveyors who have been supplied with standard measures.

4-5 EDWARD VII., A. 1905

No. 5.—List of lots in the Yukon Territory of which surveys have been confirmed during the year ending June 30, 1904.

No. 6.—List of miscellaneous surveys in the Yukon Territory of which returns have been received during the year ending June 30, 1904.

No. 7.—Statement of work executed in the office of the chief draughtsman.

No. 8.—Statement of work performed in the survey records office for the twelve months ending June 30, 1904.

No. 9.—Statement of work executed in the photographic office during the twelve months ending June 30, 1904.

No. 10.—Statement of work executed in the lithographic office for the twelve months ending June 30, 1904.

No. 11.—Descriptions of townships in which surveys were made during the year 1903.

No. 12.—Report of P. R. A. Belanger, D.L.S.

No. 13.—Report of J. J. Dalton, D.T.S.

No. 14.—Report of L. E. Fontaine, D.L.S.

No. 15.—Report of E. W. Hubbell, D.L.S.

No. 16.—Report of A. W. Johnson, D.L.S.

No. 17.—Report of G. J. Lonergan, D.L.S.

No. 18.—Report of J. E. Ross, D.L.S.

No. 19.—Report of Arthur Saint Cyr, D.L.S.

No. 20.—Report of J. N. Wallace, D.L.S.

No. 21.—Examination papers of the board of examiners for Dominion Land Surveyors.

I have the honour to be, sir, your obedient servant,

E. DEVILLE,
Surveyor General.

SESSIONAL PAPER No. 25a

APPENDIX No. 1 TO THE REPORT OF THE SURVEYOR-GENERAL.

SCHEDULE of Dominion Land Surveyors employed, and work executed by them, from July 1, to December 31, 1903.

Surveyor.	Address.	Description of Work.
Abrey, G. B.....	Toronto, Jct., Ontario.	Contract No. 4 of 1903. The subdivision of townships 37 and 38, range 24; townships 41 and 42, ranges 18, 19 and 20; township 43, ranges 21 and 22 and townships 43 and 44, range 23, all west of the second meridian..
Aylsworth, C. F. . . .	Madoc, Ont.....	Subdivision of townships 27 and 28, range 29A. Part subdivision and survey of north outline of township 26, range 26. Remarking corners in parts of township 27 in ranges 29 and 30. Survey of the north outline of township 26, range 25, all west of the principal meridian, also resurvey of parts north and east outlines of township 10, range 11, east principal meridian.
Beatty, David	Parry Sound, Ont., . .	Contract No. 11 of 1903. Subdivision of townships 41, 42, 43 and 44, ranges 10 and 11 and township 45, in ranges 9 and 10, all west of the third meridian.
Beatty, Walter.	Delta, Ont.....	Contract No. 10 of 1903. Subdivision of townships 46 47, range 6, township 47, range 7, townships 41, 42, 43, 44 and 45, range 8 and townships 41, 42, 43 and 44, range 9, all west of the third meridian.
Bélanger, P. R. A . . .	Ottawa, On.....	Renewal of corner marks during 1903 in township 26, range 30, west of the principal meridian and in township 24 in range 1, 12, 13, 14 and 15; township 25 in ranges 1, 2, 12, 13, 14, 15 and 16; township 26 in ranges 12, 13, 14, 15 and 16; township 27, ranges 7 and 15; township 28, ranges 2, 3, 6, 13, 14 and 15; township 29, ranges 13, 14, 15 and 16; township 30 ranges 13 and 14; township 31, ranges 9, 10, 11, 12 and 13 and township 32 in ranges 9, 10 and 11; all west of the second meridian. Traverse of Qu'Appelle river through township 19A, range 11 and part subdivision of township 26 in ranges 15 and 16, west of the second meridian.
Bolton, Lewis.....	Listowel, Ont.....	Contract No. 43 of 1903. Subdivision of townships 43, 45, 46, 47 and 48, ranges 1 and 2, west of the fourth meridian.
Bourgeault, A.	St. Jean Port Joli, Que.	Contract No. 19 of 1903. Subdivision of townships 35 and 36, range 9 and township 35, range 10, all west of the second meridian. Resurvey of the north outline of township 23, range 9. Correction survey of township 24, ranges 8 and 9 and township 35, range 10, all west of the second meridian.
Bourgault, C. E.....	St. Jean Port Joli, Que.	Assistant to Wm. Pearce, Chief Inspector of Surveys, during 1903.
Bowman, H. J.....	Berlin, Ont.....	Contract No. 50 of 1903. Subdivision of townships 40, 41 and 42, in ranges 24, 25 and 26, west of the third meridian.
Bray, Edgar.....	Oakville, Ont.....	Contract No. 1 of 1903. Subdivision of townships 34 and 35, ranges 1 and 2; survey of the east outline of township 36, range 2, all west of the second meridian.
Bray, L. T	Amherstburg, Ont. . .	Contract No. 33 of 1903. Subdivision of townships 39, 40, 42, 43 and 44, range 23; townships 43, 44 and 45, ranges 24 and 25 and townships 44 and 45, range 26, all west of the third meridian.
Carbert, J. A.....	Lacombe, Alta.. . . .	Contract No. 37 of 1903. Subdivision of townships 37, ranges 8, 9, 10, 13, 14, 15, 16 and 17, and of townships 38, ranges 11, 12, 15 and 16, all west of the fourth meridian.
Côté, J. A.....	Quebec, Que.....	Contract No. 46 of 1903. Subdivision of townships 34, 35 and 36, ranges 21, 22 and 23, all west of the second meridian.
Côté, J. L.....	Pakan, Alta.....	Contract No. 52 of 1903. Subdivision of township 59, range 16, west of the fourth meridian.
Dalton, J. J.....	Milton West, Ont. . . .	Subdivision of part of township 52, range 15, west of the third meridian. Correction survey of part of the subdivision of township 50, range 28, west of the third meridian and of townships 49 and 50, range 1, west fourth meridian. Survey of the townsite of Lloydminster, in sec. 2, township 50, range 28, west of third meridian. Survey of the east outline of township 50, range 18, of

4-5 EDWARD VII., A. 1905

APPENDIX No. 1 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE of Dominion Land Surveyors employed, and work executed by them, from July 1 to December 31, 1903.—*Continued.*

Surveyor.	Address.	Description of Work.
		townships 51 and 52, ranges 16, 17, 18, 19, 20 and 21, of township 53, range 24, and of township 54, ranges 24 and 25; also the north outline of township 51, range 17, all west of the third meridian. Survey of east outlines of township 56, ranges 5, 6, 7 and 8, and of the 15th base line across ranges 5, 6, 7 and 8, all west of the fourth meridian.
Deans, W. J.....	Brandon, Man.....	Contract No. 16 of 1903. Subdivision of townships 45 and 46, ranges 11 and 12, west of the third meridian and township 46, range 15, west of second meridian. Survey of east boundary of townships 47 and 48, range 12, west third meridian.
Dickson, Jas.....	Fenelon Falls, Ont ...	Contract No. 3 of 1903. Subdivision of townships 30, 31 and 32, range 2 and townships 31 and 32, range 1, all west of third meridian and townships 37 and 38, range 23 and township 37, range 22, west second meridian.
Driscoll, A.....	Edmonton, Alta . . .	Contract No. 36 of 1903. Subdivision of townships 46, 47 and 48, ranges 3 and 4, west fourth meridian.
Drummond, Thos. . .	Montreal, Que.	Contract No. 23 of 1903. Subdivision of township 40, ranges 8, 9, 11, 12, 13, 14 and 15, and township 41, ranges 8, 9 and 10, all west fourth meridian.
Ducker, W. A. . . .	Winnipeg, Man.....	Survey of township outlines in eastern Manitoba. No returns.
Dumais, P. T. C. . . .	Hull, Que.	Contract No. 2 of 1903. Subdivision of townships 33, 34 and 35, ranges 6 and 7, and township 36, range 6, west second meridian.
Edwards, Geo	Ottawa, Ont.....	Survey of lots near Field, in Rocky Mountains Park of Canada. Subdivision of townships 38 and 39, ranges 7 and 8, west fourth meridian. Contract No. 60 of 1903, northwest of Red Deer. No returns.
Fairchild, C. C. . . .	Brantford, Ont.....	Contract No. 29 of 1903. Subdivision of townships 49 and 50, range 9, township 50, range 10 and townships 42 and 43, ranges 5, 6 and 7, all west of the fourth meridian.
Fawcett, Thos.....	Niagara Falls, Ont... .	Contract No. 5 of 1903. Subdivision of townships 35 and 36, ranges 24, 25, 26, 27, 28 and 29, townships 37 and 38, ranges 13 and 14, the east outline of townships 39 and 40, range 15, all west of the second meridian.
Fontaine, L. E. . . .	Levis, Que.....	Part of subdivision of townships 8, 9, 10, 11, 12, 15 and 16, range 1, and township 16, range 2, all west of the fifth meridian and of township 11, ranges 29 and 30, west of the fourth meridian.
Francis, J.	Poplar Point, Man....	Contract No. 18 of 1903. Subdivision of townships 34, 35 and 36, range 3, township 36, range 4, west second meridian.
Gordon, R. J.	Stirling, Alta	Contract No. 39 of 1903. Subdivision of township 46, ranges 7, 8, 9, 10, 11 and 12, and township 48, range 5, all west of the fourth meridian.
Gore, T. S.....	Victoria, B.C	Contract No. 35 of 1903. Subdivision of township 50, ranges 16 and 17; townships 49 and 50, range 18; townships 48, 49, 50 and 51, range 19; townships 49, 50 and 51, range 20; townships 49 and 51, range 21, and townships 50 and 51, range 22. Survey of parts of north and east outlines of township 49, range 22, and of east outlines of township 50, ranges 19 and 20, and of township 52, range 22, all being west of the third meridian.
Hopkins, M. W. . . .	Hamilton, Ont.	Contract No. 31 of 1903. Subdivision of townships 49, 50 and 51, ranges 3 and 4, township 51, range 5, and townships 49 and 50, range 6, all west of the fourth meridian.
Hubbell, E. W.....	Ottawa, Ont.	The renewal of corners in township 45, ranges 16, 17, 18, 20 and 21 and township 46, ranges 15, 16, 17, 18, 19 and 21, all west of the fourth meridian.
James, S.....	Toronto, Ont.	Contract No. 34 of 1903. Subdivision of townships 39, 40 and 41, ranges 18 and 19, township 38, ranges 18 and 21, township 41, range 17, township 35, range 21, township 42, range 19, and townships 36 and 37, range 21, all west of the third meridian.

SESSIONAL PAPER No. 25a

APPENDIX No. 1 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE of Dominion Land Surveyors employed, and work executed by them, from July 1 to December 31, 1903.—*Continued.*

Surveyor.	Address.	Description of Work.
Johnson, A. W.	New Westminster, B.C.	Part subdivision of townships 5 and 6, range 1, west of the seventh meridian and of townships 16 and 17, range 21, townships 14 and 15, range 22, townships 4, 5, 6 and 7, ranges 28 and 29 and townships 4 and 6, range 30, west of the sixth meridian.
Kirk, J. A.	Revelstoke, B.C.	Miscellaneous surveys in British Columbia. No returns.
Lemoine, C. E.	Beaulieu, Que.	Contract No. 20 of 1903. Subdivision of townships 29, 30, 31, 32 and 33, ranges 20 and 21, township 39, range 17 and part subdivision of township 38, range 17, all west of the second meridian. Survey of township outlines east of townships 29 and 40, range 18; townships 32 and 33, range 20, townships 29, 30, 31, 32 and 33, range 21, and of townships 30, 32 and 33, range 23; also north outlines of townships 28 and 32, ranges 20 and 21, all being west of the second meridian.
Lendrum, R. W.	Strathcona, Alta.	Contract No. 28 of 1903. Subdivision of townships 51 and 52, ranges 9 and 10, west of the fourth meridian.
Lonergan, G. J.	Buckingham, Que.	Renewal of corners in townships 54, 55, 56 and 57, range 20, townships 56 and 57, range 21, township 57, ranges 18, 19 and 22 and township 56, range 19, all west of the fourth meridian. Traverse of Bert lake in township 57, range 23, west of the fourth meridian.
Lucas, S. B.	Ponoka, Alta.	Contract No. 24 of 1903. Subdivision of township 43, ranges 11, 12, 13 and 14, township 42, ranges 11 and 12, west of the fourth meridian and township 46, range 2, west of the fifth meridian.
Mailhiot, J. E.	Three Rivers, Que.	Contract No. 42 of 1903. No returns. (Mr. Mailhiot died while in the field and before doing any work.)
Martin, A. F.	Winnipeg, Man.	Contract No. 8 of 1903. Part subdivision of townships 29 and 30, range 29, subdivision of townships 29 and 30, ranges 28, 27, 26 and 24, township 30, range 25, townships 35 and 36, range 20, township 35, range 19, township 37, ranges 12, 16 and 17 and township 33, range 12, all west of the second meridian and townships 27 and 28, range 1, west of the third meridian.
Michaud, A.	Edmonton, Alta.	Contract No. 27 of 1903. Subdivision of townships 51, 52, 53 and 54, range 11 and townships 53 and 54, range 12, all west of the fourth meridian. Resurvey of the east boundary of township 51, range 12, west of the fourth meridian.
Miles, C. F.	Toronto, Ont.	Contract No. 38 of 1903. Subdivision of township 41, ranges 11, 12, 13 and 15, and township 42, ranges 13, 14 and 15, all west of the fourth meridian.
Moberly, H. K.	Innisfail, Alta.	Assistant to A. Driscoll, during 1903.
Molloy, John.	Winnipeg, Man.	Contract No. 12 of 1903. Subdivision of township 44, ranges 12, 13 and 14; township 43, ranges 12, 13 and 14; township 42, range 12; township 47, range 10 and township 48, ranges 11 and 12, all west of the third meridian.
McAree, John.	Toronto, Ont.	Contract No. 47 of 1903. Subdivision of townships 29, 30, 31, 32 and 33, range 22 and townships 29, 30, 31, 32, range 23, all west of the second meridian.
McFee, A.	Innisfail, Alta.	Contract No. 21 of 1903. Subdivision of township 36, ranges 15, 16, 17 and 18, and of township 35, ranges 17 and 18, west of the fourth meridian.
McGrandle, H.	Huntsville, Ont.	Contract No. 25 of 1903. Subdivision of township 45, ranges 6, 7, 8, 9, 10, 11, 12, and 13 and township 46, ranges 13 and 14, all west of the fourth meridian.
McKenna, J. J.	Dublin, Ont.	Contract No. 15 of 1903. Subdivision of townships 45 and 46, ranges 13 and 14, and of township 47, range 12. Survey of the north outline of township 44, ranges 13 and 14 and the east outline of townships 45 and 46, range 15, all being west of the third meridian.
McLatchie, John.	Nelson, B.C.	Part subdivision of township 10 in ranges 2 and 3 west of the fifth meridian.

APPENDIX No. 1 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE of Dominion Land Surveyors employed, and work executed by them, from July 1 to December 31, 1903—*Continued.*

Surveyor.	Address.	Description of Work.
McLean, J. K	Elora, Ont	Survey of township outlines north of township 48, range 5, north of township 52, ranges 6 and 7, the east outlines of township 58, range 3, townships 46, 47, 48, 57 and 58, range 4, township 51, range 5 and of townships 51 and 52, ranges 6 and 7, all west of the fifth meridian. Traverse of lakes in township 52, range 2, west of the fifth meridian.
Pearce, Wm.	Calgary, Alta.	Chief Inspector of Surveys during 1903.
Proudfoot, H. B.	Toronto, Ont.	Contract No. 35 of 1903. Subdivision of township 38, ranges 12, 13, 14, 20, 23 and 24; township 39, range 14; township 37, ranges 12, 20, 23 and 24; township 36, ranges 14, 20 and 23 and township 35, ranges 13, 14, 20, 23 and 24, all west of the third meridian. Renewal of corners in township 39, range 14, west of the third meridian.
Rainboth, E. J.	Ottawa, Ont	Contract No. 7 of 1903. Subdivision of townships 31 and 32, ranges 24, 25, 26, 27, 28 and 29, all west of the second meridian.
Rainboth, G. C.,	Aylmer, Que.	Contract No. 45 of 1903. Subdivision of townships 37, 40, 41, and 42, range 1, and townships 37, 40, 41 and 42, range 2, west of the fourth meridian, and townships 35, 36, 37, 38, 40, 41 and 42, range 28, west of the third meridian.
Reilly, W. R.	London, Ont.	Contract No. 13 of 1903. Subdivision of townships 47 and 48 ranges 13 and 14, and townships 52 and 53, ranges 23 and 24, all west of the third meridian.
Richard, J. F.	Ste. Anne de la Pocatiere, Que.	Contract No. 49 of 1903. Survey of north, south and east outlines of township 33, range 8, west of the second meridian. Subdivision of townships 34, 35 and 36, range 8, west of the second meridian.
Roberts, S. A.	Victoria, B. C.	Contract No. 14 of 1903. Subdivision of township 49, ranges 16 and 17, west of the third meridian.
Ross, Geo.	Welland, Ont.	Contract No. 51 of 1903. Subdivision of townships 41 and 42, ranges 21, 22 and 23. west of the second meridian.
Ross, J. E	New Westminster, B.C	Part subdivision of township 17, range 14, township 19 range 23 and township 18, range 25. Survey of lots 472, 518 and 520 and part subdivision in township 17, range 12. Survey of lot 518 in township 18, range 12. Survey of lots 472, 458, 460, 461 and 471 in township 17, range 13. Part subdivision and survey of trail in township 18, range 23. Part subdivision and survey of trail in township 18, range 24. Traverse of west bank of Thompson river through townships 19 and 20, range 24. Part subdivision and survey of lot 19 in township 19, range 25, part subdivision and survey of lots 14 and 376 in township 20, range 25, all this work being west of the 6th meridian.
Roy, G. P	Quebec, Que.	Contract No. 22 of 1903. Subdivision of township 39, ranges 13, 14, 15, 16 and 17, township 38, ranges 9, 10, 13, 14 and 17, and part subdivision of township 39, range 9, all west of the fourth meridian.
Saint Cyr, A.	Ottawa, Ont.	Survey of the fourteenth base line across ranges 5 to 21 inclusive. Survey of meridian outlines east of ranges 9 and 13, through townships 49, 50, 51 and 52, west of the third meridian.
Saint Cyr, J. B.	Ste. Anne de la Pérade, Que.	Contract No. 26 of 1903. Subdivision of township 47, ranges 6, 7, 9, 10, 11, 12, 13 and 14 and township 48, ranges 6, 8, 11 and 14, all west of the fourth meridian.
Selby, H. W.	Toronto, Ont.	Contract No. 44 of 1903. Subdivision of townships 34, 35, 36, 37, 38, 39, 40, 41, 42 and 43, range 3, townships 35, 36, 37, 38, 39, 42, and 43, range 4, and survey of the north outline of township 34, range 4, all west of the fourth meridian.
Sewell, H. de Q.	Toronto, Ont.	Contract No. 32 of 1903. Subdivision of township 44, ranges 1, 2, 3, 4, 5, and 6, and township 45, ranges 3 and 4, west of the fourth meridian, and township 44, ranges 27 and 28, west of the third meridian.
Turnbull, Thos.	Winnipeg, Man.	Inspector of Surveys during 1903.

SESSIONAL PAPER No. 25a

APPENDIX No. 1 TO THE REPORT OF THE SURVEYOR GENERAL

SCHEDULE of Dominion Land Surveyors employed, and work executed by them, from July 1 to December 31, 1903.—*Concluded.*

Surveyor.	Address.	Description of Work.
Tyrrell, J. W.....	Hamilton, Ont.....	Contract No. 41 of 1903. Subdivision of townships 35 and 36, ranges 17, 18, 19 and 22, township 37, ranges 15, 16, 17, 18, 19 and 22, township 38, ranges 15, 16, 19 and 22, and townships 39 and 40, ranges 15 and 16, all west of the third meridian.
Wallace, J. N.	Hamilton, Ont.....	Survey of east outlines of townships 35, 36, 41 and 42 in range 6, townships 27, 28, 29, 30, 31, 33, 34, 35, 41, 42, 43 and 44, in range 7 and townships 29, 30, 31, 32, 33, and 34, range 8, the north outline of township 44, range 6 and of township 32, range 7, all being west of the fifth meridian.
Warren, James	Walkerton, Ont.....	Contract No. 9, of 1903. Subdivision of townships 29 and 30, ranges 6 and 7, west of the third meridian, township 34, ranges 18, 19 and 20, and townships 25 and 26, ranges 21 and 22, west of the second meridian.
Weeks, A. S.....	Whitemouth, Man	Assistant to Thos. Turnbull, Inspector of Surveys during 1903.
Weeks, M. B.....	Brantford, Ont.. . . .	Contract No. 30 of 1903. Subdivision of townships 48, 49 and 50, range 7, townships 44, 49 and 50, range 8, and township 44, range 9, west of the fourth meridian.
Wheeler, A. O.. . .	Calgary, Alta.....	Topographer of the Department of the Interior. Survey of the Rocky Mountains near the Canadian Pacific Railway.
Wilkins, F. W	Norwood, Ont	Contract No. 40 of 1903. Subdivision of townships 39, 40, 41, 42, 43 and 44, ranges 20, 21 and 22, west of the third meridian.
Woods, J. E.....	Frank, Alta	Contract No. 6 of 1903. Subdivision of townships 33 and 34, range 24, and township 33, range 25, west of the second meridian, also townships 27 and 28, ranges 19 and 20, west of the 4th meridian.

4-5 EDWARD VII., A. 1905

APPENDIX No. 2 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE of Dominion Land Surveyors employed, and work executed by them, from
January 1, 1904, to June 30, 1904.

Surveyor.	Address.	Description of Work.
Abrey, G. B.....	Toronto Jct., Ont.....	Contract No. 10 of 1904. East of Prince Albert. No returns.
Aylen, John.....	Aylmer, Que.....	Contract No. 52 of 1904. Northwest of Calgary. No returns.
Aylsworth, C. F.	Madoc, Ont.....	Survey of Riverton townsite in township 23, range 4, east of the principal meridian and subdivision of township 21, range 7, west of the principal meridian.
Beatty, David.....	Parry Sound, Ont.....	Contract No. 15 of 1904. Subdivision of townships 49 and 50, range 1 and survey of east outline of townships 51 and 52, range 2, west of third meridian. Contract No. 23 of 1904. Southwest of Battleford. No returns.
Beatty, Walter.....	Delta, Ont.....	Contract No. 14 of 1904. Subdivision of township 50, ranges 26, 27 and 28, and township 51, range 27, west of third meridian. Contract No. 24 of 1904. Southwest of Battleford. No returns.
Belanger, P. R. A.	Ottawa, Ont.....	Renewal of corners in townships 24 and 25, range 10, townships 23, 24, 25 and 26, range 11 and township 23, ranges 12, 13, 14 and 15, all west of the second meridian.
Bolton, Lewis.....	Listowel, Ont.	Contract No. 29 of 1904. Northwest of Battleford. No returns.
Bourgault, C. E.	St. Jean Port Joli, Q..	Contract No. 43 of 1904. Subdivision of townships 51 and 52, range 4, and part subdivision of township 52, range 5, all west of the fifth meridian.
Bourgeault, A.....	" "	Contract No. 7 of 1904. North of Yorkton. No returns.
Bowman, H. J.	Berlin, Ont.....	Contract No. 20 of 1904. Subdivision of township 30, range 18, west third meridian.
Bray, Edgar....	Oakville, Ont.....	Survey of township outlines northwest of Edmonton. No returns.
Bray, L. T.	Amherstburg, Ont....	Retracing old subdivision surveys in Southern Manitoba. No returns.
Carbert, J. A.....	Lacombe, Alta.....	Contract No. 39 of 1904. Subdivision of township 32, range 22, west fourth meridian.
Cautley, R. W.....	Pakan, Alta	Contract No. 34 of 1904. Subdivision of township, 58, ranges 13, 14, 15, 16 and 18, and township 57, range 13, and part subdivision of township 59, range 17, all west of the fourth meridian.
Cavana, A. G.	Orillia, Ont.....	Contract No. 8 of 1904. Southeast of Prince Albert. No returns.
Cote, J. A.....	Quebec, Que.....	Contract No. 18 of 1904. In the Bear Hills. South of Battleford. No returns.
Cote, J. L.....	Pakan, Alta.....	Contract No. 35 of 1904. Subdivision of township 58, ranges 19 and 20 and township 59, ranges 18 and 19, west of fourth meridian.
Craig, J. D.....	Ottawa, Ont.....	Inspector of Surveys. Eastern section.
Dalton, J. J.....	Milton West, Ont.....	Miscellaneous subdivision surveys in Southern Alberta. Part subdivision of township 22, range 9, west fourth meridian.
Dickson, Jas.....	Fenelon Falls Ont....	Contract No. 64 of 1904. Lake Dauphin district. No returns.
Drummond, Thos....	Montreal, Que.....	Contract No. 40 of 1904. Subdivision of township 57, range 3, and township 58, ranges 2 and 3, west fifth meridian.
Ducker, W. A.	Winnipeg, Man.	Survey of outlines east of townships 7 and 8, ranges 9 and 10; parts of outlines east of townships 7 and 8, range 8 and north of township 8, range 10; survey of correction line south of township 7, ranges 8, 9 and 10 and north of township 6, ranges 9 and 10, all east of the principal meridian.
Dumais, P. T. C....	Hull, Que.....	Contract No. 4 of 1904. Lake Dauphin district. No returns.
Edwards, Geo.....	Ottawa, Ont.....	Contract No. 46 of 1904. (An extension of contract No. 60 of 1903.) Subdivision of township 41, range 5, west of fifth meridian.
Fairchild, C. C.	Brantford, Ont.....	Contract No. 37 of 1904. Subdivision of township 44, ranges 11, 12, 13 and 14, west fourth meridian.
Farncomb, A. E....	Red Deer, Alta.....	Contract No. 48 of 1904. Subdivision of townships 36, 37 and 38, range 5, and township 35, range 4, west fifth meridian.
Fawcett, Adam.....	Dawson, Y. T.....	Contract No. 28 of 1904. Near Onion Lake. No returns.
Fawcett, Thos.....	Niagara Falls, Ont....	Contract No. 36 of 1904. North of Medicine Hat. No returns.

SESSIONAL PAPER No. 25a

APPENDIX No. 2 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE of Dominion Land Surveyors employed, and work executed by them from January 1, 1904, to June 30, 1904.—*Continued.*

Surveyor.	Address.	Description of work.
Fontaine, L. E.....	Levis, Que.....	Survey of township outlines in Northern Alberta. West of fifth meridian. No returns.
Francis, J.....	Poplar Point, Man....	Contract No. 58 of 1904. West of Riding Mountain. Timber reserve. No returns.
Gordon, M. L.....	Ottawa, Ont.....	Contract No. 16 of 1904. Southwest of Saskatoon. No returns.
Gordon, R. J.....	Stirling, Alta	Contract No. 62 of 1904. Southeast of Lethbridge. No returns.
Gore, T. S.....	Victoria, B.C.....	Contract No. 27 of 1904. Subdivision of township 52, ranges 21 and 22, west third meridian.
Grover, G. A.	Ottawa, Ont.....	Contract No. 17 of 1904. Southwest of Saskatoon. No returns.
Harvey, Chas.....	Toronto, Ont.....	Contract No. 5 of 1904. Part subdivision of township 34, range 27, township 33, range 28, township 32, range 29, and township 31, range 30, all west of the principal meridian.
Holcroft, H. S.....	Toronto, Ont.....	Contract No. 11 of 1904. Subdivision of township 46, range 14, west second meridian.
Hopkins, M. W.....	Hamilton, Ont.....	Contract No. 56 of 1904. East of Edmonton. No returns.
Hubbell, E. W.....	Ottawa, Ont.....	Renewal of corners in township 50, ranges 27 and 28, west fourth meridian and in township 50, range 1, west fifth meridian.
Johnson, A. W.....	New Westminster, B.C.	Surveys near Harrison Lake in British Columbia. No returns.
Kirk, J. A.....	Revelstoke, B.C.....	Miscellaneous surveys in British Columbia. No returns.
Knight, R. H.....	Bruce Mines, Ont.....	Contract No. 54 of 1904. Subdivision of townships 31 and 32, range 28, west of principal meridian.
Lemoine, C. E.....	Beaulieu, Que.....	Contract No. 9 of 1904. East of Saskatoon. No returns.
Lendrum, R. W....	Strathcona, Alta.....	Contract No. 31 of 1904. East of Edmonton. No returns.
Lonergan, G. J. ...	Buckingham, Que.....	Work in Edmonton district. Renewal of corners in township 48, ranges 24 and 25, west fourth meridian.
Martin, A. F.....	Winnipeg, Man.....	Contract No. 63 of 1904. South of Moose Jaw. No returns.
Michaud, A.....	Edmonton, Alta...	Contract No. 33 of 1904. Subdivision of township 53, range 10, west fourth meridian.
Miles, C. F.....	Toronto, Ont.....	Contract No. 51 of 1904. Northwest of Calgary. No returns.
Molloy, J.....	Winnipeg, Man.....	Contract No. 3 of 1904. Subdivision of township 1, range 14, east of principal meridian.
McLean, J. K.....	Elora, Ont.....	Survey of township outlines north of Edmonton. No returns.
Nash, T. S.....	Ottawa, Ont.....	Inspector of Surveys, 1904. Western central section.
O'Hara, W. F.....	Ottawa, Ont.....	Contract No. 45 of 1904. Southwest of Edmonton. No returns.
Phillips, E. H.....	Ottawa, Ont.....	Inspector of Surveys, 1904. Eastern central section.
Ponton, A. W.....	Macleod, Alta	Contract No. 50 of 1904. Northwest of Calgary. No returns.
Proudfoot, H. B....	Toronto, Ont.....	Contract No. 53 of 1904. Subdivision of townships 32, 33, 34 and 35, range 5; township 34, range 4 and township 32, range 6, all west of the fifth meridian.
Rainboth, G. C.....	Aylmer, Que.....	Contract No. 25 of 1904. West of Saskatoon. No returns.
Reilly, W. R.....	London, Ont	Contract No. 13 of 1904. Northeast of Saskatoon. No returns.
Richard, J. F.....	Saint Anne de la Pocatiere, Que.	Contract No. 6 of 1904. North of Fort Pelly. No returns.
Rinfret, Raoul.....	Edmonton, Alta	Contract No. 41 of 1904. Subdivision of township 56, ranges 1, 2 and 3, and survey of north outline of township 55, range 3, all west of fifth meridian.
Ross, Geo.....	Welland, Ont.....	Contract No. 22 of 1904. West of Saskatoon. No returns.
Ross, J. E.....	New Westminster, B.C.	Part subdivision of township 19, range 15, township 21, range 17, township 13, range 23, and traverse of part of Shuswap lake and part subdivision of township 21, range 8, traverse of part of Thompson river in township 20, range 17, survey of limit of Railway Belt, through township 14, range 22, part subdivision and traverse along Nicola river in townships 14 and 15, range 23 and traverse along Nicola river through townships 15, 16 and 17, range 24, and township 17, range 25, all west of sixth meridian.
Roy, G. P	Quebec, Que.....	Contract No. 42 of 1904. Subdivision of townships 51 and 53, range 5 and part subdivision of township 51, range 6, west fifth meridian.
Saint Cyr, A.....	Ottawa, Ont.....	Survey of township outlines in Peace river district. No returns.

APPENDIX No. 2 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE of Dominion Land Surveyors employed and work executed by them, from January 1, 1904, to June 30, 1904—*Concluded*.

Surveyor.	Address.	Description of Work.
Saint Cyr, J. B.....	Ste. Anne de la Pé- rade, Que.....	Contract No. 32 of 1904. East of Edmonton. No returns.
Saunders, B. J.....	Regina, Assa.....	Contract No. 2 of 1904. Subdivision of townships 45 and 46, range 3, and part subdivision of township 47, range 3, west fifth meridian.
Selby, H. W....	Toronto, Ont.....	Contract No. 49 of 1904. Subdivision of township 35, ranges 6 and 7, and part subdivision of township 36, range 7, west fifth meridian. Survey of township outlines in the Peace river district. No returns.
Thompson, W. T....	South Qu'Appelle, Assa	Contract No. 55 of 1904. Part subdivision of townships 26 and 28, range 16, subdivision of township 27, and 27A, range 16 and township 27, range 15, survey of south and west outlines of township 27A, range 15, west of second meridian.
Tyrrell, J. W.....	Hamilton, Ont.....	Contract No. 26 of 1904. West of Saskatoon. No returns.
Wallace, J. N.....	Hamilton, Ont.....	Survey of township outlines in the Peace river district. No returns.
Warren, James.....	Walkerton, Ont.....	Contract No. 19 of 1904. South of Battleford. No returns.
Watt, B. H.....	Ottawa, Ont.....	Inspector of Surveys, 1904. Western section.
Weekes, A. S.....	Glencoe, Ont.....	Contract No. 1 of 1904. Subdivision of township 10, range 11, east principal meridian. Contract No. 21 of 1904. South of Battleford. No returns.
Weekes, M. B.....	Brantford, Ont.....	Contract No. 30 of 1904. Subdivision of township 56, range 5, west fourth meridian.
Wheeler, A. O.....	Calgary, Alta.....	Topographer of the Department of the Interior. Survey of Rocky Mountains near the Canadian Pacific Railway.
Wilkins, F. W.....	Norwood, Ont.....	Contract No. 38 of 1904. Southeast of Edmonton. No re- turns.

APPENDIX No. 3 TO THE REPORT OF THE SURVEYOR GENERAL.

SCHEDULE showing for each surveyor employed during 1903, the number of miles surveyed of township subdivision lines, township outlines, traverse of lakes and rivers, and resurvey; also cost of same.

Surveyor.	Miles of Subdivision.	Miles of Outlines.	Miles of Traverse.	Miles of Re-survey.	Total Mileage.	Total cost. \$ cts.	Cost per mile. \$ cts.	Method of execution.
Abrey, G. B.	791.34	6.00	186.18	23.00	1,006.52	17,112 17	17 00	Contract.
Aylsworth, C. F.	38.00	12.00		82.50	132.50	6,500 00	49 05	Day work.
Beatty, David	473.04	6.00	51.93	16.02	546.99	7,268 71	13 28	Contract.
Beatty, Walter.	440.70		182.13	23.00	645.83	8,661 17	13 41	"
Belanger, P. R. A.	28.00		6.00	3,100.00	3,134.00	18,813 01	6 00	Day work.
Bolton, Lewis.	424.66		51.75	114.00	590.41	5,932 59	10 05	Contract.
aBourgault, C. E.						2,087 00		Day work.
Bourgault, A.	193.90		42.29	157.61	393.80	7,560 84	19 20	Contract.
Bowman, H. J.	420.30		159.89	15.55	595.74	6,034 63	10 13	"
Bray, Edgar.	204.00	18.04	14.40		236.44	6,692 10	28 30	"
Bray, L. T.	633.95		78.49	23.05	735.49	6,350 16	8 63	"
Charbert, J. A.	571.06		52.43	4.00	627.49	5,300 64	8 45	"
Côté, J. A.	415.76		38.77	62.76	517.29	8,499 80	16 43	"
Côté, J. L.	48.30			2.00	50.30	1,446 70	28 76	"
Dalton, J. J.	6.00	144.50		22.00	172.50	6,950 97	40 29	Day work.
Deans, W. J.	175.48	12.08	14.80	42.00	244.36	3,533 26	14 45	Contract.
Dickson, Jas.	523.31		26.09	4.00	553.40	4,631 77	8 37	"
Driscoll, A.	408.24	5.94	63.56	24.00	501.74	6,769 33	13 51	"
Drummond, Thos.	527.11		120.93	84.00	732.04	9,865 61	13 48	"
Ducker, W. A.		75.50			75.50	2,876 00	38 09	Day work.
Dumais, P. T. C.	413.05	24.00	37.52	26.00	500.57	13,936 16	27 84	Contract.
Edwards, Geo.	217.96		11.20	1.00	230.16	1,996 84	8 67	"
Fairechild, C. C.	607.74		92.81	48.16	748.71	8,566 18	11 44	"
Fawcett, Thos.	642.99	12.73	159.93		815.65	9,604 12	11 77	"
Fontaine, L. E.	233.00	6.00			239.00	7,728 75	32 33	Day work.
Francis, J.	235.85	18.00			253.85	6,531 71	25 73	Contract.
Gordon, R. J.	365.62		37.36		402.98	3,849 88	9 55	"
Gore, T. S.	746.69	24.13	74.78	77.88	923.48	16,039 12	17 37	"
Hopkins, M. W.	510.98		86.39	6.00	633.37	6,674 27	10 53	"
Hubbell, E. W.				91.50	91.50	5,755 60	62 89	Day work.
James, S.	728.24		102.15	15.00	845.39	6,415 49	7 59	Contract.
Johnson, A. W.	85.00		81.00		166.00	9,055 80	54 55	Day work.
Kirk, J. A.	6.00		2.00		8.00	525 00	65 62	"
Lemoine, C. E.	686.86		61.45	102.65	850.96	10,625 66	12 48	Contract.
Lendrum, R. W.	194.95	6.00	19.09	36.00	256.04	5,344 30	20 87	"
Loneragan, G. J.			5.00	301.00	306.00	8,570 10	28 00	Day work.
Laures, S. B.	402.00				402.00	2,529 00		Contract.
eMailhot, J. E.						660 00		"

APPENDIX No. 3 TO THE REPORT OF THE SURVEYOR GENERAL—Con.

SCHEDULE showing for each surveyor employed during 1903, the number of miles surveyed of township subdivision lines, township outlines, traverse of lakes and rivers, and resurvey; also cost of same—Concluded.

Surveyor.	Miles of Subdivision.	Miles of Outlines.	Miles of Traverse.	Miles of Re-survey.	Total Mileage.	Total cost. \$ cts.	Cost per mile. \$ cts.	Method of execution.
Martin, A. F.	939.89	12.00	36.51	81.00	1,069.40	16,111 87	15 07	Contract.
Michaud, A.	287.03		129.71	40.00	456.74	9,798 94	21 45	"
Miles, C. F.	389.08		8.41	84.00	481.49	4,906 65	10 19	"
Molloy, John	424.06		29.01	72.00	525.07	7,729 17	14 72	"
McAree, John	469.57		22.19		491.76	3,588 03	7 30	"
McFee, A.	250.94		40.95	2.00	293.89	2,437 03	8 29	"
McGrandle, H.	583.50		100.39	80.00	763.89	9,254 82	12 12	"
McKenna, J. J.	224.18		26.93	66.20	317.31	4,516 85	14 23	"
McLatchie, John	11.00	2.00	4.90		17.90	341 10	19 07	"
McLean, J. K.		83.00	13.00		96.00	8,237 03	85 80	Day work.
Proudfoot, H. B.	1,404.80		253.72	22.00	1,680.52	13,442 71	8 00	Contract.
Rainboth, E. J.	446.67		51.00	45.00	542.67	4,342 49	8 02	"
Rainboth, G. C.	850.31		172.47	35.00	1,057.78	9,311 17	8 80	"
Reilly, W. R.	439.64		40.82	6.00	492.46	7,113 64	14 44	"
Richard, J. F.	151.45	6.00	2.46	18.00	195.91	5,828 37	29 75	"
Roberts, S. A.	84.45	24.00		23.00	107.45	2,572 32	23 94	"
Ross, Geo.	233.20				374.31	7,869 64	21 02	"
Ross, J. E.	110.00		141.11		245.00	7,718 71	31 50	Day work.
Roy, G. P.	593.84		64.00		694.34	8,162 26	11 75	Contract.
Saint Cyr, A.		154.00			154.00	9,407 47	61 08	Day work.
Saint Cyr, J. B.	576.85		88.44	62.00	727.29	9,101 10		Contract.
Selby, H. W.	927.68	12.11	180.92	14.00	1,134.71	11,019 09	9 71	"
Sewell, H. de Q.	433.28		127.87	1.00	562.15	7,041 75	12 53	"
Tyrrell, J. W.	1,194.59		261.41	80.43	1,536.43	13,058 36	8 50	"
Wallace, J. N.		157.00			157.00	8,296 73	52 84	Day work.
Warren, Jas.	571.82	12.00	18.74	30.00	632.56	5,567 19	8 80	Contract.
aWeekes, A. S.						1,801 00		Day work.
Weekes, M. B.	388.14		59.45	60.00	507.59	5,822 11	11 47	Contract.
dWheeler, A. O.						4,931 00		Day work.
Wilkins, F. W.	853.73		75.22	26.00	954.95	7,405 42	7 75	Contract.
Woods, J. E.	712.01		105.43	1.00	818.44	6,789 62	8 29	"
	25,981.79	833.03	4,050.38	5,389.81	36,255.01	490,817 48		

Total mileage 36,255.01
Total cost..... \$490,817 48
Cost per mile..... 13 54

a Assistant inspector of surveys. b Final returns not received, figures are estimated. c No survey made, died before commencing work. d Topographical survey of the Rocky Mountains and Yoho Parks.

SESSIONAL PAPER No. 25a

APPENDIX No. 4 TO THE REPORT OF THE SURVEYOR GENERAL.

LIST of Dominion Land Surveyors who have been supplied with Standard Measures.

Name.	Address.	Date of Appointment.	Remarks.
Abrey, G. B	Toronto Jct., Ont	April 14, '72..	
Austin, G. F	Dewdney, Alta	" 14, '72..	
Aylen, J	Aylmer, Que	May 29, '85..	
Aylsworth, C. F	Madoc, Ont.	" 17, '86..	
Barwell, C. S. W	Dawson, Yukon Territory..	Aug. 21, '94..	
Bayne, G. A	Winnipeg, Manitoba.	April 14, '72..	
Beatty, D	Parry Sound, Ont.	" 14, '72..	
Beatty, W	Delta, Ont.	" 14, '72..	
Belanger, P. R. A. . . .	Ottawa, Ont.	May 17, '80..	Surveys Staff Dept. of the Interior.
Belleau, J. A	"	" 15, '83..	" " "
Bigger, C. A.	"	Mar. 30, '82..	Astronomer " "
Bolton, L.	Listowel, Ont.	April 14, '72..	
Boswell, E. J.	Winnipeg, Man.	Feb. 18, '03..	
Bourgeault, A.	St. Jean Port Joli, Que. . . .	Mar. 29, '83..	
Bourgault, C. E.	" "	Feb. 21, '88..	
Bourget, C. A	Ste. Adelaide de Pabos, Que.	May 14, '84..	
Bourne, R.	Fort Rouge, Winnipeg, Man.	June 17, '75..	
Bowman, H. J.	Berlin, Ont.	Feb. 16, '88..	
Brabazon, A. J.	Medicine Hat, Assa.	May 12, '82..	District Engineer, N.W.T.
Bray, S.	Ottawa, Ont.	Nov. 14, '83..	Department of Indian Affairs.
Bray, E.	Oakville, Ont.	April 14, '72..	
Bray, L. T	Amherstburg, Ont.	Feb. 18, '03..	
Brodie, S.	Fort Qu'Appelle, Assa	April 14, '72..	
Brownlee, J. H.	Victoria, B. C.	" 15, '87..	
Burke, W	Minnedosa, Man.	" 14, '72..	
Burnet, H	Victoria, B.C.	June 22, '85..	
Burwell, H. M.	Vancouver, B.C.	Feb. 17, '87..	
Carbert, J. A.	Sault Ste. Marie, Ont.	May 12, '80..	
Carroll, C	Prince Albert, Sask.	April 14, '72..	District Engineer, N.W.T.
Cautley, R. W.	Dawson, Yukon Territory..	Sept. 2, '96..	
Cavana, A. G.	Orillia, Ont.	Nov. 16, '76..	
Charlesworth, L. C. . . .	Regina, Assa	Feb. 27, '03..	
Cleveland, E. A	Vancouver, B.C.	June 27, '99..	
Côte, J. A.	Quebec, Que.	May 14, '84..	
Côte, J. L	Dawson, Yukon Territory..	Mar. 21, '90..	
Cotton, A. F	New Westminster, B.C.	May 11, '80..	
Craig, J. D.	Ottawa, Ont.	Feb. 24, '02..	Inspector of Surveys Dept. Interior.
Dalton, J. J.	Milton, Ont.	April 17, '79..	Dominion Topographical Surveyor.
Deans, W. J.	Brandon, Man.	May 13, '86..	
Dennis, J. S.	Calgary, Alta.	Nov. 19, '77..	Dominion Topographical Surveyor, Inspector of Irrigation and British Columbia Land Commissioner, C. P. R.
Denny, H. C	"	April 1, '82..	
Desmeules, J. C.	Murray Bay, Que.	" 14, '72..	
Dickson, H. G.	Whitehorse, Yukon Territ'y.	Mar. 19, '89..	
Dickson, J	Fenelon Falls, Ont.	April 14, '72..	
Doupe, J.	Winnipeg, Man.	" 14, '72..	
Doupe, J. L.	"	Oct. 6, '88..	Asst. Land Commissioner, C. P. Ry.
Drewry, W. S	Victoria, B.C.	Nov. 14, '83..	
Driscoll, A	Edmonton, Alta	Feb. 23, '87..	District Engineer, N.W.T.
Drummond, T	Montreal, Que	June 24, '78..	Dominion Topographical Surveyor
DuBerger, C. C.	Waterloo, Que	Nov. 17, '81..	
Ducker, W. A	Winnipeg, Man.	Mar. 30, '83..	Swamp Lands Commissioner.
Dumais, P. T. C	Hull, Que.	" 29, '82..	
Edwards, G	Thurso, Que	April 14, '72..	
Ellacott, C. H.	Regina, Assa.	Feb. 22, '99..	
Fairchild, C. C.	Simcoe, Ont	" 20, '01..	
Farncomb, A. E	Regina, Assa.	Mar. 12, '02..	
Fawcett, T.	Niagara Falls, Ont.	Nov. 18, '76..	Dominion Topographical Surveyor.
Fawcett, A.	Dawson, Yukon Territory..	Feb. 22, '93..	
Fitzpatrick, J. D. A . . .	Kildare, Que.	" 23, '87..	
Fontaine, L. E.	Lévis, Que.	Aug. 13, '92..	
Foster, F. L.	Toronto, Ont	" 14, '72..	
Francis, J.	Poplar Point, Man.	June 17, '75..	
Garden, J. F	Vancouver, B.C.	May 13, '80..	
Garden, G. H.	Lethbridge, Alta.	April 14, '72..	

APPENDIX No. 4 TO THE REPORT OF THE SURVEYOR GENERAL--*Con.*

LIST of Dominion Land Surveyors who have been supplied with Standard Measures--*Continued.*

Name.	Address.	Date of Appointment.	Remarks.
Garden, C.	Winnipeg, Man.	April 14, '72.	
Gauvreau, L. P.	Quebec, Que.	" 14, '72.	
Gibbon, J.	Dawson, Yukon Territory.	Feb. 12, '91.	
Gordon, M. L.	Toronto, Ont.	" 18, '04.	
Gordon, R. J.	Stirling, Alta.	Mar. 12, '02.	
Gore, T. S.	Victoria, B.C.	April 19, '79.	
Green, T. D.	Dawson, Yukon Territory.	May 19, '84.	
Grover, G. A.	Kingston, Ont.	Feb. 18, '04.	
Harris, J. W.	Winnipeg, Man.	April 14, '72.	City Surveyor, Winnipeg.
Harvey, C.	Indian Head, Assa.	Feb. 17, '04.	
Henderson, W.	Chilliwack, B.C.	Nov. 17, '83.	
Holcroft, H. S.	Toronto, Ont.	Feb. 18, '03.	
Hopkins, M. W.	Hamilton, Ont.	" 20, '01.	
Hubbell, E. W.	Ottawa, Ont.	May 19, '84.	Surveys Staff, Dept. of the Interior.
James, S.	Toronto, Ont.	April 14, '72.	
Jephson, R. J.	Dawson, Yukon Territory.	May 12, '80.	
Johnson, A. W.	Kamloops, B.C.	Mar. 12, '02.	
Kirk, J. A.	Revelstoke, B.C.	May 11, '80.	
Klotz, O. J.	Ottawa, Ont.	Nov. 19, '77.	Dom. Topograph. Surveyor, Astronomer, Department of the Interior.
Knight, R.	Bruce Mines, Ont.	Feb. 18, '04.	
Latimer, F. H.	Detroit, Mich.	" 13, '85.	
Laurie, R. C.	Battleford, Sask.	April 27, '83.	District Engineer, N.W.T.
Lawe, H.	Winnipeg, Man.	" 14, '72.	
Lemoine, C. E.	Quebec, Que.	Mar. 31, '82.	
Lendrum, R. W.	Edmonton, Alta.	May 15, '80.	
Lonergan, G. J.	Buckingham, Que.	Feb. 28, '01.	
Lucas, S. B.	Ponoka, Alta.	April 14, '72.	
Lumsden, H. D.		" 14, '72.	
MacPherson, C. W.	Dawson, Yukon Territory.	Mar. 7, '00.	
Magrath, C. A.	Lethbridge, Alta.	Nov. 16, '81.	Dominion Topographical Surveyor, Land Commissioner, Alberta Railway and Coal Co.
Malcolm, L.	Blenheim, Ont.	April 14, '72.	
Martin, A. F.	Winnipeg, Man.	" 14, '72.	
Michaud, A.	Montreal, Que.	Feb. 18, '03.	
Miles, C. F.	Rat Portage, Ont.	April 14, '72.	
Moberly, H. K.	Innisfail, Alta.	Feb. 27, '03.	
Molloy, J.	Rosser, Man.	April 14, '72.	
Moore, H. H.	Tp. York, Ont.	Feb. 17, '04.	
McArthur, J. J.	Ottawa, Ont.	" 17, '79.	
McFadden, M.	Neepawa, Man.	" 14, '72.	
McFee, A.	Innisfail, Alta.	" 19, '79.	
McGrandle, H.	Huntsville, Ont.	May 30, '83.	
McKenna, J. J.	Dublin, Ont.	April 14, '72.	
McKenzie, J.	New Westminster, B.C.	Nov. 18, '88.	Dominion Lands Agent, New Westminster.
McLatchie, J.	Nelson, B.C.	April 14, '72.	
McLean, J. K.	Elora, Ont.	" 1, '82.	
McPherson, A. J.	Dawson, Yukon Territory.	Feb. 21, '01.	
McPhillips, G.	Windsor, Ont.	June 17, '75.	
McVittie, A. W.	Blairmore, Alta.	Mch. 12, '02.	
Nash, T. S.	Morrisburgh, Ont.	Feb. 18, '04.	Inspector of Surveys, Dept. of Interior.
Ogilvie, W.	Ottawa, Ont.	April 14, '72.	
O'Hara, W. F.	Chatham, Ont.	Feb. 19, '95.	
Patrick, A. P.	Calgary, Alta.	Nov. 19, '77.	Dominion Topographical Surveyor.
Pearce, W.	Calgary, Alta.	May 10, '80.	
Phillips, E. H.	Minden, Ont.	Feb. 24, '02.	Inspector of Surveys, Dept of Interior
Proudfoot, H. B.	Toronto, Ont.	Mch. 28, '82.	
Rainboth, E. J.	Aylmer, Que.	May 19, '81.	
Rainboth, G. C.	Aylmer, Que.	April 14, '72.	
Ralph, Wm.		" 14, '72.	
Reid, J. L.	Prince Albert, Sask.	" 14, '72.	
Reilly, W. R.	London, Ont.	Nov. 17, '81.	
Richard, J. F.	Ste. Anne de la Pocatière, Q.	May 13, '82.	
Rinfret, R.	Dawson, Y. T.	Feb. 20, '00.	

SESSIONAL PAPER No. 25a

APPENDIX No. 4 TO THE REPORT OF THE SURVEYOR GENERAL—C.

List of Dominion Land Surveyors who have been supplied with Standard Measures—*Concluded*.

Name.	Address.	Date of Appointment.	Remarks.
Ritchie, J. F.	Nelson, B.C.	Jan. 7, '89.	
Robertson, H. H.	Montmagny, Que.	April 14, '72.	
Roberts, S. A.	Victoria, B. C.	May 16, '85.	
Roberts, V. M.	Sturgeon Falls, Ont.	" 17, '86.	
Robinson, F. J.	Macleod, Alta.	Feb. 20, '00.	District Engineer, N.W.T.
Rombough, M. B.	Morden, Man.	April 14, '72.	
Rorke, L. V.	Sudbury, Ont.	Aug. 13, '91.	
Ross, G.	Welland, Ont.	Nov. 21, '82.	
Ross, J. E.	New Westminster, B.C.	Feb. 12, '91.	
Roy, G. P.	Quebec, Que.	Nov. 17, '81.	
Saint-Cyr, J. B.	Ste-Anne de la Pérade, Que.	Feb. 17, '81.	
Saint-Cyr, A.	Ottawa, Ont.	" 17, '87.	
Saunders, B. J.	Regina, Assa.	Nov. 16, '84.	
Seager, E.	Rat Portage, Ont.	April 14, '72.	
Selby, H. W.	Wabigoon, Ont.	Nov. 15, '82.	
Sewell, H. de Q.	Toronto, Ont.	May 16, '85.	
Shaw, C. A. E.	Victoria, B.C.	" 10, '80.	
Speight, Thos.	Toronto, Ont.	Nov. 16, '82.	
Starkey, S. M.	Starkey's P.O., N.S.	April 14, '72.	
Stewart, G. A.	Calgary, Alta.	" 14, '72.	
Stewart, L. B.	Toronto, Ont.	Nov. 22, '82.	Dominion Topographical Surveyor; Professor, School of Practical Science, Toronto.
Stewart, E.	Ottawa, Ont.	April 14, '72.	Chief Inspector of Timber & Forestry.
Talbot, A. C.	Calgary, Alta.	May 13, '80.	District Engineer, N.W.T.
Thompson, W. T.	Fort Qu'Appelle, Assa.	Nov. 19, '77.	Dominion Topographical Surveyor and District Engineer, N.W.T.
Tremblay, A. J.	Les Eboulements, Que.	Feb. 18, '90.	
Towle, C. E.	Waterloo, Que.	April 14, '72.	
Turnbull, T.	Winnipeg, Man.	Mch. 29, '82.	
Tyrrell, J. W.	Hamilton, Ont.	Feb. 16, '87.	
Vaughan, J. W.	Vancouver, B.C.	June 11, '78.	
Vicars, J.	New Westminster, B.C.	May 17, '86.	
Wallace, J. N.	Hamilton, Ont.	Feb. 20, '00.	
Warren, J.	Walkerton, Ont.	April 14, '72.	
Watt, G. H.	Ottawa, Ont.	Feb. 24, '02.	Inspector of Surveys, Dept. Interior.
Weekes, A. S.	Clinton, Ont.	Feb. 11, '92.	
Weekes, M. B.	Brantford, Ont.	" 18, '03.	
Wheeler, A. O.	Calgary, Alta.	Nov. 21, '82.	Topographer of the Dept. Interior.
White-Fraser, G.W.R.	Dawson, Yukon Territory	Feb. 21, '88.	Dominion Topographical Surveyor.
Wiggins, T. H.	Regina, Assa.	Feb. 18, '96.	
Wilkins, F. W.	Norwood, Ont.	May 18, '81.	Dominion Topographical Surveyor.
Wilkinson, W. D.	Toronto, Ont.	Feb. 22, '93.	
Woods, J. E.	Frank, Alta.	Nov. 14, '85.	

APPENDIX No. 5 TO THE REPORT OF THE SURVEYOR GENERAL.

List of lots in the Yukon Territory of which Surveys have been confirmed during the year ending June 30, 1904.

GROUP No. 1.

Lot No.	Area in Acres.	Surveyor.	Year of Survey.	Date of Approval.	Claimant.	Remarks.
32	40.00	T. D. Green	1903	May 15, '04	Siener Carlson & Johans'n	
33	Road.	" "	1903	" 15, '04	Falcon Joslin & J. A. Williams.	
34	10.00	" "	1903	" 15, '04	Falcon Joslin.	

GROUP No. 2.

55	27.459	A. J. McPherson..	1903	May 4, '04	N.W.M.P. Reserve.....	
122	19.69	Geo. White-Fraser	1903	Dec. 11, '03	A. L. Stephens & A. H. Anderson	
168	29.42	Raoul Rinfret.....	1903	Oct. 6, '03	R. Auzias Turenne	
169	21.13	" "	1903	Sept. 8, '03	G. V. Stevens	
170	6.226	Geo. White-Fraser	1902-04	May 25, '04	E. Vachon.....	
171	51.6	Adam Fawcett	1904	Mar. 16, '04	Phil. S. Wilkins.....	
172	50.7	" "	1904	" 16, '04	" "	
175	19.12	T. D. Green	1900	July 2, '03	Lars. Netland, R. R. Campbell & A. J. Bannerman	
181	51.65	"	1901	Dec. 11, '03	H. G. Blankman, J. C. Phillip & D. W. Cullen	Cancelled at request of Director of Survey- Dec. 12, 1903.
182	44.63	"	1901	Nov. 24, '03	D. W. Cullen	
213	44.37	R. J. Jephson	1903	Sept. 8, '03	F. A. Cleveland.	
214	50.62	" "	1903	" 8, '03	Mrs. J. Cleveland.	
229	9.7	Jas. Gibbon.....	1903	May 4, '04	Thos. Wilson.....	
239	2.343	A. J. McPherson..	1903	Oct. 19, '03	Addition to Bonanza Townsite.
240	7.023	" "	1903	" 19, '03	Addition to Bonanza Townsite.
246	45.14	T. D. Green...	1904	June 27, '04	Louis A. Herdt...	
247	42.07	Adam Fawcett....	1903	Sept. 10, '03	F. G. Fleming.....	
248	50.6	" "	1903	July 24, '03	H. Pinkiert & C. M. Preitz.....	
249	51.09	" "	1903	" 24, '03	F. W. Arnold, G. M. Hill & H. Pinkiert	
257	10.00	Geo. White Fraser.	1903	Dec. 10, '03	John Young.....	
260	80.00	Adam Fawcett....	1903	Sept. 21, '03	John P. Snyder.....	
262	55.75	Raoul Rinfret. ...	1903	Nov. 9, '03	R. Auzias Turenne.....	
263	2.21	R. J. Jephson	1903	Mar. 23, '04	Antone Vernunier.....	
264	1.805	" "	1903	" 23, '04	" "	
266	46.22	A. Fawcett.....	1903	Sept. 16, '03	N. E. King.....	
267	44.22	"	1903	" 16, '03	L. B. Smith.....	
268	43.07	"	1903-04	Apl. 25, '04	Fred. Elliot	
269	51.1	"	1903	Sept. 21, '03	Laura B. Smith...	
270	51.65	"	1903	" 21, '03	Joseph T. Moore.....	
271	20.00	"	1903	" 8, '03	Robert Riddel.....	
273	46.31	"	1903	" 21, '03	E. D. Blanchfield. ...	
274	47.0	"	1903	Dec. 7, '03	W. J. Dernier.....	
275	17.0	R. J. Jephson	1903	Feb. 6, '04	H. McDougal.....	
276	36.26	" "	1903	" 6, '04	R. H. Cavill.....	
281	51.65	T. D. Green	1903	Jan. 11, '04	M. R. Boyd & C. Lowney	
282	2.32	R. J. Jephson	1903	Dec. 16, '03	Hugo Brachfeld.....	
283	18.7	Adam Fawcett....	1904	May 25, '04	Laura B. Smith.....	
284	51.46	R. J. Jephson	1903	" 25, '04	" "	

SESSIONAL PAPER No. 25a

APPENDIX No. 5 TO THE REPORT OF THE SURVEYOR GENERAL.

LIST of lots in the Yukon Territory of which Surveys have been confirmed during the year ending June 30, 1094.—*Concluded.*

GROUP No. 5.

Lot No.	Area in Acres.	Surveyor.	Year of Survey.	Date of Approval.	Claimant.	Remarks.
58	51.65	H. G. Dickson...	1903	Sept. 21, '03	W. G. McGee & Robert Lowe	
59	51.65	" "	1903	" 21, '03	J. Lauderdale & W. G. McGee.	
60	29.03	" "	1903	" 21, '03	W. G. McGee, Robt. Lowe & J. Lauderdale.	

GROUP No. 7.

4	160.00	A. J. McPherson..	1903	May 9, '04	Indian Reserve.
5	160.00	" "	1903	" 9, '04	" "
6	41.94	C. W. MacPherson	1903	Feb. 25, '04	N.W.M.P. Reserve.....

GROUP No. 10.

7	19.96	Adam Fawcett....	1903	Aug. 12, '03	Otto Zitska.....
8	160.00	" "	1903	" 15, '03	"
9	160.09	" "	1903	" 14, '03	"
10	119.38	R. J. Jephson	1903	Dec. 18, '03	Mrs. E. J. Miller.....
11	160.43	" "	1903	" 18, '03	" "
12	38.1	" "	1903	" 11, '03	N.W.M.P. Reserve....
14	80.0	" "	1903	" 18, '03	Chas. H. Maas... ..

GROUP No. 13.

3	49.03	Raoul Rinfret....	1903	Nov. 9, '03	Thomas Smith.....
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4-5 EDWARD VII., A. 1905

APPENDIX No. 6 TO THE REPORT OF THE SURVEYOR GENERAL.

List of miscellaneous surveys in the Yukon Territory of which returns have been received during the year ending June 30, 1904.

Description of Survey.	Surveyor.	Year.
Base lines on Little Skookum &c. tributaries of Bonanza creek..	C. W. MacPherson....	1901
" Allgold creek.....	Jas. Gibbon	1902
" Bear creek.....	"	1902
" Duncan creek, &c	A. J. McPherson	1903
" "	Raoul Rinfret.....	1902-03
" part of Hunker creek, &c	Jas. Gibbon	1901-02
" Gold Run creek, &c.....	C. W. MacPherson....	1901-02
" Montana creek, &c.....	"	1902
" Keystone creek, &c.	A. J. McPherson	1903
" Christal creek.....	"	1903
Survey of Last Chance road.....	Jas. Gibbon	1902
" public road to Copper King mineral claim.....	H. G. Dickson.....	1903
Reference traverse at Whitehorse.....	"	1903
Survey of public road to Grafter mineral claim.....	"	1903
Base lines on Haggart and Dublin creeks.....	A. J. McPherson	1903
" part of Bonanza creek.....	C. W. MacPherson....	1901
Survey of part of Bonanza road.....	"	1902
" Hunker road	Jas. Gibbon	1902*
" Goldbottom road.....	"	1902
" road from Summit of Hunker to Dominion creek, &c..	"	1902
Base lines on Thistle creek, &c.....	A. J. McPherson	1902
" on part of Bonanza creek.....	"	1901
" Livingstone, Summit lake, &c.....	C. W. MacPherson....	1902

* In four sections.

SESSIONAL PAPER No. 25a

APPENDIX No. 7 TO THE REPORT OF THE SURVEYOR GENERAL.

STATEMENT of work executed in the office of the chief draughtsman.

Returns of surveys examined—

Township subdivision..	640
Township outlines..	149
Mineral claims..	14
Correction and other miscellaneous surveys..	97
Township plans completed for printing..	490
Preliminary township plans prepared..	140
Preliminary township plans received from inspectors..	450
Proofs of plans examined..	569
Outline sketches prepared..	1,799
Plans of Yukon lots received..	55
Plans of miscellaneous Yukon surveys received..	26
Tracings of Yukon survey plans made..	95
New plans of groups of Yukon lots compiled..	4
Sectional maps revised and reprinted..	29
Declarations of settlers received..	336
Progress sketches received and filed	952
Miscellaneous plans and tracings made..	328
Applications for various information dealt with, about..	1,180
Field books received from record office and used in connection with office work..	1,555
Plans received from record office and used in connection with office work..	437

P. B. SYMES,
Chief Draughtsman.

APPENDIX No. 8 TO THE REPORT OF THE SURVEYOR GENERAL.

STATEMENT of work performed in the Survey Records Office for the twelve months
ending June 30, 1904.

Files received and dealt with..	1,749
Letters drafted..	2,112
Reports, drafts, memos. to Council..	23
Plans, tracings, &c., copied or compiled..	419
Statutory declarations copied and mailed..	428
Plans sent to agents, registrars, &c...	18,204
Pages of field notes copied..	1,320
Prints of plans received and stored..	51,441
Original plans received and recorded..	644
Original field books received and recorded..	327
Letters written to agents, registrars, &c...	798
Registered parcels mailed..	939

C. J. STEERS,
In charge of Survey Records.

APPENDIX No. 9 TO THE REPORT OF THE SURVEYOR GENERAL.
STATEMENT of Work executed in the Photographic Office during the twelve months ending June 30, 1904.
FOR THE DEPARTMENT OF THE INTERIOR.

	4 × 5	5 × 7	8 × 10	10 × 12	11 × 14	18 × 20	24 × 30	30 × 36	36 × 42	42 × 48	Total.
Wet plate negatives.....			92		106	694					847
Litho paper transfers.....					2	145					147
Zinc transfers.....			4		4	459					467
Dry plate negatives.....	96	153	2		71						322
Bromide prints.....		106		56	367	173	87	67	21		877
Vandyke prints.....			26		511		468	14			1,019
Silver prints.....	275	889	8		121						1,293
Total.....	371	1,148	132	56	1,182	1,426	555	81	21		4,972

FOR THE GEOLOGICAL SURVEY.

	4 × 5	5 × 7	8 × 10	10 × 12	11 × 14	18 × 20	24 × 30	30 × 36	36 × 42	42 × 48	Total.
Wet plate negatives.....			1	1	1	5					9
Dry plate negatives.....	60	16									76
Bromide prints.....							5		2	3	10
Vandyke prints.....					10	28		4			42
Silver prints.....	30	89	92								211
Total.....	90	105	93	1	22	33	5	4	2	3	384

SESSIONAL PAPER No. 25a

APPENDIX No. 10 TO THE REPORT OF THE SURVEYOR GENERAL.

STATEMENT of Work executed in the Lithographic Office for the twelve months ending
June 30, 1904.

Month.	MAPS.		TOWNSHIP PLANS.		FORMS, &c.	
	No.	Copies.	No.	Copies.	No.	Copies.
1903.						
July.....	9	1,710	24	2,400	—	
August.....	1	100	32	3,200	—	
September..	6	2,575	22	2,200	4	1,450
October.....	3	570	53	5,300	6	2,800
November.....	2	1,000	52	5,200	1	35
December.....	2	2,100	46	4,600	11	4,240
1904.						
January.....	6	2,500	28	2,800	4	1,470
February.....	10	2,990	46	4,600	2	600
March.....	17	4,900	28	2,800	7	5,950
April.....	4	1,200	60	6,000	1	1,000
May.....	11	2,320	52	5,200	1	250
June.....	10	5,575	47	4,700	2	7,000
Totals.....	81	27,540	490	49,000	39	24,795

SUMMARY of Work for the Year.

	Number of Jobs.	Number of Copies.	Number of Impres- sions.	Cost.	Cost per Map or Form.
				\$ cts.	\$ cts.
Maps.....	81	27,540	32,495	2,046 70	25 27
Townships.....	490	49,000	49,300	3,765 25	7 68
Forms, &c.....	39	24,795	24,795	600 30	15 39
Totals.....	610	101,335	106,590	6,412 25	

NOTE.—The cost in the above statement is for salaries only ; it does not include supplies and materials.

APPENDIX No. 11 TO THE REPORT OF THE SURVEYOR GENERAL.

Descriptions of townships in which surveys were made of which reports were received during the year ending June 30, 1904.

TOWNSHIPS EAST OF THE PRINCIPAL MERIDIAN.

Range 8.

Township 2.—The whole of the soil in this township is third class. The southwest corner is principally muskeg, tamarack and poplar bluffs. The southeast corner is muskeg, poplar and spruce bluffs and the north half is about the same. The centre is somewhat rolling. There are not any settlers. There are no streams of water in the township.—*C. F. Aylsworth, D.L.S., 1902.*

Township 3.—The easterly two-thirds of this township north of Rat river is tamarack, spruce, jackpine, poplar, birch, cedar bluffs and muskegs. These different timbers are given as near as possible in order of abundance. The westerly one-third north of Rat river is willow flats, with tamarack, spruce, jackpine, poplar, &c. That portion of the township south of Rat river is hay meadow, muskeg, poplar, tamarack, jackpine, &c. Some of these hay meadows are the finest I ever saw in the west. The water in Rat river is clear and pure, but it is possible that the banks may overflow in the spring and flood large areas, especially on the south side of the river. There are no settlers in the township as yet.—*C. F. Aylsworth, D.L.S., 1902.*

Range 9.

Township 3.—Most of the northwest quarter of this township consists of rolling sand ridges, partially timbered with jackpine, the greater part of which has been fire-killed. There is a belt of swamp from a quarter to a mile in width extending southerly through the eastern portion. A man named Walton has a shanty and stable of logs on the southeast corner of section 21. Most of the northeast quarter is spruce and tamarack swamp, with some good clear cedar along the easterly boundary, and some rolling sand hills partially timbered with jackpine in the southwest corner. Sand river, a branch of the Rat river flows southerly through it. (Southeast quarter.)—Rat river crosses the east boundary of this quarter about half a mile north of the southeast corner, and flows through it in a westerly and northwesterly direction. Sand river flows south, crossing the north boundary of section 14 close to the northeast corner, and flows in a southerly direction into Rat river. Nearly all that portion south of the Rat is sandy land, timbered with green jackpine and poplar. There is considerable swamp east of Sand river and north of the Rat. The balance of the quarter consists largely of sand ridges, timbered with dead jackpine, with irregular narrow strips of swamp between them. (Southwest quarter.)—Rat river crosses this quarter of the township in a westerly direction, flowing out at the northwest quarter of section 7. All that portion south of the river is willow or tamarac swamp; the portion north of the river is of a mixed character, consisting of low sand ridges interspersed with swampy land, particularly along the river. There is about a mile in width of spruce and tamarack swamp north of the river along the westerly boundary.—*W. A. Ducker, D.L.S., 1902.*

Township 5.—The surface of section 4 is undulating to hilly with some spruce and tamarack swamp along its western boundary, but the greater portion is rolling sand hills sparsely timbered with small jackpine. The Canadian Northern Railway crosses the west half from north to south. The surface of section 5 is very level, most

SESSIONAL PAPER No. 25a

TOWNSHIPS EAST OF THE PRINCIPAL MERIDIAN—RANGE 9.

of it being tamarack and spruce swamp with some small cedar in places. Nearly all the tamarack is under 12 inches in diameter, but much of it is very dense and would furnish a large quantity of excellent fuel. Most of the west half of section 6 is swampy and partially covered with small dead tamarack. Nearly all the balance of the section is well timbered with tamarack up to 12 inches in diameter, also a considerable quantity of spruce and some cedar. Near all the west half of section 7 is marsh interspersed with small dead tamarack, the balance is thickly timbered with tamarack, spruce and cedar, although very few trees are 12 inches through. Nearly all the west half of section 9 is spruce and tamarack swamp with a dense growth of timber under 12 inches in diameter. The east half is chiefly rolling sand hills, sparsely timbered with stunted jackpine. The Canadian Northern Railway crosses this section from north to south and Bedford station is located on the southwest quarter. Section 16 is nearly all spruce, tamarack and cedar swamp and a considerable portion of the timber has been cut into cordwood. The Canadian Northern Railway runs through it in a southeasterly direction. Sections 17 and 18 are very wet spruce and tamarack swamp intermixed with some cedar. The timber is small but much of it suitable for fences. Sections 19, 20, 21, 27, 28, 30, 31, 32, 33 and 34 are low and swampy, although there are some narrow ridges timbered with poplar and jackpine in the northwesterly part of the township. A considerable portion of the timber in the northwest quarter of the township has been fire-killed, and consists of small spruce and tamarack. The balance of the timber on this portion is spruce, tamarack and cedar, suitable for fuel, building logs and fence posts, most of the largest having been culled for lumber or ties. Sections 1, 2, 3, 10, 12, 13, 14, 15, 22, 23, 24, 25, 35 and 33 are located on the westerly slope of the Cypress mountains and consist chiefly of rolling sand hills, sparsely timbered with stunted jackpine, with some spruce and tamarack of fair size in the hollows.—*W. A. Ducker, D.L.S., 1902.*

Township 6 (south and east outlines).—Most of section 1 and parts of sections 2 and 12 are situated on the westerly slope of the Cypress mountains, and consist of rolling sand hills with a few scattered jackpine. The balance of the township is very level and swampy, the east half being timbered with small belts and islands of small tamarack and some spruce with open marshes intervening. Nearly all the timber on the west half of the township is fire-killed, considerable of it is fit for fuel, but the next fire that passes through that portion of the township will destroy all the wood. The surface generally throughout the township is a thick growth of moss overlying wet peaty mould, except on a few low ridges which are very stony.—*W. A. Ducker, D.L.S., 1902.*

(North outline).—The easiest way to reach this township is from Marchand station on the Canadian Northern Railway, but a considerable portion of it would be inaccessible in summer owing to its marshy character. About one-third of the township consists of muskeg and most of the balance is swampy and on the few ridges that are dry, the soil is shallow and stony. The surface is very level and swampy and most of the timber suitable for fuel or other purpose has been removed as the township has been under timber lease for a number of years. Most of what remains is small and fire-killed. There is very little hay to be found in the township as nearly all the open ground is muskeg. There are no streams of consequence in the township but water is abundant and of good quality in winter. There is still a considerable quantity of dead timber suitable for fuel if used before it rots. No minerals were found. This township is close to the railway but there are still moose and other deer with prairie chickens, partridges, rabbits and some lynx. The township is of very little value for any purpose unless it produces a new growth of timber.—*W. A. Ducker, D.L.S., 1903.*

Township 7.—(South and west outlines).—This township would be difficult to reach in summer, the best way probably being from the Dawson road to St. Anne. With the exception of a strip of sandy poor soil along the northern limit, nearly all

4-5 EDWARD VII., A. 1905

TOWNSHIPS EAST OF THE PRINCIPAL MERIDIAN—RANGE 9.

the township is very swampy, and there is a good deal of muskeg in it. With the exception of the muskegs, most of the surface is timbered with jackpine on the ridges and spruce and tamarack on the lower portions. All the larger timber has been removed, and the greater portion of the balance is fire-killed, but the tamarack is still sound. There is very little, if any, hay in the township. Brokenhead river, a small stream about 20 links wide, rises in a shallow lake about 60 acres in area in the southeast portion of the township. It has one small branch, but water is abundant and of good quality. There is no water-power. No minerals were noticed, and no rock in place. Moose and other deer, with prairie chickens, partridges, rabbits and lynx are found. The township is of very little value for settlement.—*W. A. Ducker, D.L.S., 1903.*

Township 8.—The Dawson road makes this township easily accessible from St. Anne. Most of the north half and the southwest quarter is low and swampy, with sandy ridges, some of which are of considerable area in the southwest quarter. Most of the southeast quarter is high rolling sandy land and all the higher portions are very stony, many of the granite boulders being of enormous size. With the exception of the southeast quarter, which is rolling, most of the surface is level and swampy, and covered with spruce and tamarack on the lower ground and jackpine and poplar on the rolling portions. There are some ridges in the north half timbered with good poplar 6 to 8 inches in diameter, but the greater part of the timber in this half is spruce, tamarack and cedar, under 10 inches in diameter. Most of the southeast quarter is jackpine under 8 inches, and the greater part of the timber on the southwest quarter has been fire-killed and the best of it removed. A small quantity of hay can be cut near the Dawson road in the westerly portion of the township. Brokenhead river (with some small branches) flows through the township. It is about 20 feet wide where it crosses the north boundary and probably about 2 feet deep. Water seems abundant, and of good quality. There are no water-powers. For fuel there is a large amount of good tamarack in the northern half and jackpine in the southeastern quarter, and several hundred cords were cut during the past winter, but it is too far from a railway to be of much value for commercial purposes. No minerals were noticed, and no rock in place. Most of the dry land is too light and stony to be of much value for agricultural purposes.—*W. A. Ducker, D.L.S., 1903.*

Range 10.

Township 3.—(Northwest quarter.)—There is a strip of swamp about half a mile in width along the westerly boundary of this quarter; the balance is mostly rolling sand hills interspersed with small swamps. The timber is chiefly small jackpine and poplar, except in the swampy portions, above mentioned, where there is some spruce, tamarack and cedar of fair size. Over half the timber on this quarter of the township has been fire-killed.

(Northeast quarter.)—This quarter is of a very broken character, consisting of low sand hills and ridges interspersed with irregular areas of swamp and muskeg. There is some green jackpine and poplar on the ridges, but most of the timber has been fire-killed, and the tamarack in the swamp is very small and scattered.

(Southeast quarter.)—Rat river flows southwesterly through this quarter. There is a narrow strip of swampy land along the river and some swamp north of it, although the greater portion of the quarter consists of light sandy ridges timbered with small poplar and jackpine, nearly all of which has been fire-killed.

(Southwest quarter.)—Rat river flows westerly throughout this quarter, and has banks from 20 to 30 feet high in places. There is a high sandy ridge running southerly through the quarter. West of this ridge and along the westerly limit north of Rat river there is a strip of spruce and tamarack swamp, in which nearly all the timber is fire-killed. Most of the balance is rolling sandy land, sparsely timbered with scrubby

SESSIONAL PAPER No. 25a

TOWNSHIPS EAST OF THE PRINCIPAL MERIDIAN—RANGE 10.

jackpine and some poplar, a considerable portion of which is fire-killed.—*W. A. Ducker, D.L.S., 1902.*

Township 5.—The greater part of this township is situated on the Cypress mountains and has a rolling surface with a few deep ravines. Sections 25, 35 and 36 are nearly all spruce and tamarack swamp with a considerable quantity of cedar suitable for fence posts and paving blocks. The swamp has a thick covering of moss overlying a deposit of very wet peaty loam. The soil of the balance of the township is almost pure sand on a subsoil of sand and gravel in places. The southeast corner has numerous small open marshes fringed with spruce and tamarack, the sandy ridges being densely wooded with jackpine 6 to 8 inches in diameter, interspersed with large poplar. The balance of the township is sparsely timbered with stunted jackpine, with small spruce and tamarack in the ravines. A large quantity of railway ties have been taken out along the east boundary of the township. There is still considerable tamarack suitable for ties in the swampy portions. With the exception of the cedar the balance of the timber is only fit for fuel.—*W. A. Ducker, D.L.S., 1902.*

Township 6.—The Cypress mountains extend northeasterly through the central portion of the township. There is a narrow belt of spruce and tamarack swamp along the central line of the township from east to west. With this exception, this portion of the township is rolling sand hills with a scattered growth of stunted jackpine of little or no value. Sections 18, 19, 30, 31 and 32 on the west side and sections 1, 2, 12, 13 and 24 on the east side of the hills consist almost entirely of spruce and tamarack swamp. There is some good cedar on sections 1 and 2 suitable for posts and paving blocks. Nearly all the remaining timber is small and suitable for fuel only.—*W. A. Ducker, D.L.S., 1902.*

(North outline.)—The most convenient way to reach this township is from Bedford station on the Canadian Northern Railway along the old Mennonite trail on which travelling will be good any time during the summer season. A large portion of this township is high rolling and the soil is of very poor quality, being light and sandy except in the swamps, which are too wet for cultivation till drained. The greater portion of the surface is sparsely timbered with jackpine and scrub, but the swamps are timbered with spruce and tamarack. Nearly all the large timber of any value has been removed, but there is an abundant supply of timber under 10 inches diameter for fuel, fencing and small building logs. There are a few small hay meadows scattered over the township. There are no permanent streams but the water on the low lands is generally of good quality. There are no water powers. There is an abundant supply of fuel scattered over the township. There are no indications of stone quarries or minerals. Moose, caribou and jumping deer are found in the township, also prairie chickens, partridges, rabbits and lynx. The township is of very little value except as a fuel reserve.—*W. A. Ducker, D.L.S., 1903.*

Township 7.—(North, south and east outlines.)—This township is most conveniently reached by the Dawson road from St. Anne, the road being very good. About two-thirds of the surface is very light, sandy and stony, many of the granite boulders being very large. The balance is generally swampy, and useless for cultivation until drained. The upland portion is rolling and generally timbered with jackpine, and the swamps, where not muskeg, are timbered with spruce and tamarack. Nearly all the timber left in the township is under 10 inches diameter, and only suitable for fuel, fencing and building logs. No hay was seen in this township. Good water seems close to surface throughout the township. Fuel is abundant throughout the township. No stone quarries were seen, nor minerals. The township is of very little value except as a timber or fuel reserve.—*W. A. Ducker, D.L.S., 1903.*

Township 8.—This township can be most readily reached by the Dawson road from St. Anne, on which travelling is good. About two-thirds of the surface is spruce and tamarack swamp, too wet for cultivation till drained. The balance consists of sandy

4-5 EDWARD VII., A. 1905

TOWNSHIPS EAST OF THE PRINCIPAL MERIDIAN—RANGE 10.

ridges, the soil being very light and stony. The low lands are timbered with spruce and tamarack, and most of the ridges with jackpine, though there are a few open areas. Most of the timber is under 10 inches diameter, but there is a large amount of good tamarack for fuel. About 20 tons of hay could be cut annually, mostly on sections 12 and 13. There are some small creeks in the northwest part of the township, and good water can be obtained near the surface in almost all parts of the township. No water-powers were seen. Fuel is abundant in all parts of the township, and there is a large amount of good tamarack, principally in the north half. No stone quarries were seen nor minerals. This township is of little value except for fuel supply, and is at present too far from a railway to pay for hauling.—*W. A. Ducker, D.L.S., 1903.*

Range 11.

Township 3.—(Northwest quarter.)—There is some swamp and small dead tamarack along the westerly boundary of this quarter, although the greater portion of it is undulating to rolling, and partially timbered with small jackpine and poplar, fully three-fourths of which is fire-killed.

(Northeast quarter.)—This quarter is undulating to rolling. There is a little spruce and tamarack swamp in the northeast corner, the balance being sparsely timbered with dead jackpine and some poplar. Soil is almost pure sand.

(Southeast quarter.)—This quarter is undulating to rolling, and sparsely timbered with dead jackpine and poplar. There is still a little green jackpine on the southeast corner. The soil is very light and sandy.

(Southwest quarter.)—This quarter is undulating to slightly rolling, with small areas of low land, partially covered with red willow. Timber consists of small jackpine and poplar, almost all of which has been fire-killed. The Southeastern railway crosses the township in a southeasterly direction from the west boundary of section 31 to the east boundary of section 12.—*W. A. Ducker, D.L.S., 1902.*

Range 12.

Township 3.—The surface of this township is undulating to hilly. There is very little timber on the west half. The east half is partially timbered with jackpine, poplar and a considerable area of spruce and tamarack swamp on the east side. Except in this swamp, the soil is very light and sandy. The timber in the swamp is mostly of small size, suitable for fuel. A small branch of Whitemouth river flows northerly through the northeast quarter. Summit siding is situated between sections 6 and 7, and a trail from this siding runs northeasterly to Whitemouth lake.—*W. A. Ducker, D.L.S., 1902.*

Township 4.—A well defined sandy ridge crosses this township from section 13 in a westerly direction, on which the trail from Whitemouth lake to Woodridge is located. North of the ridge is chiefly very wet spruce and tamarack swamp, of no use for settlement. South of this ridge the land is more undulating, and timbered with poplar, jackpine, spruce and tamarack on the lower land, though there is a good deal of brulé, especially in the southwest portion. The soil of this portion varies from sand to sandy loam on subsoils of sand and sandy clay, and portions will be found fairly suited for cultivation. There is an abundance of timber suited for building logs, fuel and fencing.—*W. A. Ducker, D.L.S., 1902.*

Range 13.

Township 2.—The westerly portion of this township is undulating to rolling and is largely brulé. Mud creek runs southerly through the central portion and most of

SESSIONAL PAPER No. 25a

TOWNSHIPS EAST OF THE PRINCIPAL MERIDIAN—RANGE 13.

the land along its banks is low and swampy. A large portion of the east half of the township is spruce and tamarack swamp in which the timber is very small. Most of the rolling land is sandy and of very poor quality. The Canadian Northern Railway crosses the southwest corner of the township; Vassar station is situated in it. There is some fairly good land in the northern portion and near Vassar station, but only a small portion of the township is suitable for settlement.—*W. A. Ducker, D.L.S., 1902.*

Township 3.—Whitemouth lake occupies several sections in the eastern part of the township. The quality of water in the lake is fairly good, and the depth reaches a maximum of about 14 feet, though the greater portion is under 4 feet. The bottom is generally muddy and very soft. The lake is fairly supplied with pike or jackfish, pickerel and suckers. Nearly all the south half consists of spruce and tamarack swamp and is of no value for agricultural purposes. The north half is more undulating and timbered with poplar, spruce and jackpine, with tamarack in the hollows. The soil of this portion varies from sandy to sandy loam and portions of it have a clay subsoil. A small settlement might be made in this portion, though it is somewhat difficult of access in summer.—*W. A. Ducker, D.L.S., 1902.*

Township 4.—The southeast corner of this township is broken by Whitemouth lake which in this part is very shallow and muddy, with marshy shores. A well-defined sandy ridge crosses the township from section 12 to section 18, on which is a fairly good trail from the lake to Woodridge, though the road is rather circuitous. Nearly all that portion of the township north of this ridge is spruce and tamarack swamp or muskeg and is of no value for settlement. The soil along the ridge is very light and sandy but south of it is of somewhat better quality and might be cultivated successfully.—*W. A. Ducker, D.L.S., 1902.*

Range 14.

Township 1.—Mud creek flows southerly through this township and has been used in the southern part for driving logs for several years past. The Canadian Northern Railway crosses the central portion of the township from east to west and Sprague station is located on section 15. Portions of the west half are undulating and partially timbered with poplar, birch, &c., and a number of quarter-sections in this portion will probably be found fit for settlement, but the township generally is flat and swampy with large muskegs and very wet spruce and tamarack swamps. The timber has been extensively culled for lumber and fuel purposes.—*W. A. Ducker, D.L.S., 1902.*

Township 2.—Nearly all of this township is spruce and tamarack swamps in which most of the timber is very small and scattered. The township is too wet to be of any use for agricultural purposes.—*W. A. Ducker, D.L.S., 1902.*

Township 3.—The northwest portion of this township is very much broken by Whitemouth lake. The water in the lake is of fair quality, but most of it is very shallow with a soft, muddy bottom. The lake is fairly well supplied with pike or jackfish, pickerel and suckers. The land on the island on sections 31, 32 and 33 is fairly dry and well wooded with poplar, birch, jackpine, spruce and some tamarack. The balance of the township is low and swampy, and timbered with small spruce and tamarack, most of which is too small to be of any value even for fuel.—*W. A. Ducker, D.L.S., 1902.*

Township 4.—The southwest corner of this township is broken by Whitemouth lake, which is mostly shallow, with a very muddy bottom in this portion. Whitemouth river takes its rise in the lake, and flows northerly through the township. There is a little dry land near the north shore of the lake and a little along the banks of the river, but most of the township is low spruce and tamarack swamps, on which the timber is very small, and a large proportion of it has been fire-killed. The township is not suited for settlement.—*W. A. Ducker, D.L.S., 1902.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE PRINCIPAL MERIDIAN.

Range 1.

Township 22.—The Fisher river and Icelandic river road, a branch of the Great Northern highway running north from Teulon passes through the southerly and easterly parts of this township. Soil is a black and clay loam with a clay subsoil suitable for all agricultural purposes. With the exception of the extensive muskegs, the surface is well timbered with poplar, balm of gilead, spruce and tamarack occurring in about the order named, and evenly distributed. Good swamp grass can be cut around most of the sloughs, but the surface of the large muskegs is mostly thick moss, and as they are very soft will not be of much use for hay until drained. A considerable creek, the outlet of Oak Island lake, passes through the westerly part of the township, flowing in a northeasterly direction, and loses itself in the large muskeg on the north boundary. Another creek flows westerly from the large swamp on the east boundary, and it is also lost in the same muskeg. The water is all fresh and good. On account of the level nature of the surface, no water power could be developed. Climate is good, with no summer frosts. There is an abundance of wood for fuel as mentioned above, but no stone quarries or minerals. Partridge, prairie chicken, moose and elk are very numerous, with a few caribou.—*H. B. Proudfoot, D.L.S., 1902.*

Range 3.

Township 23.—The colonization road running from Teulon to Fisher river, laid out under the supervision of the Swamp Lands commissioners, passes through section 36 of this township, and affords the only means of reaching it from the railroad. The soil is clay, with an alluvial deposit of from 6 to 10 inches of either black or clay loam, and will when cleared and drained make excellent farming land. The surface is undulating, and covered with a growth of poplar, balm of gilead and spruce, some of large size. A large part of the township is occupied by two large sloughs or lakes, which are impassable in summer. The poplar and spruce on most of the land would be suitable for building and lumber, but for the latter purpose should be reserved for settlers, as timber is scarce as a rule in this district. Large quantities of hay can be cut in and around all the sloughs and ponds. It is the ordinary swamp hay. On the high lands where there is any open country the grass is short. Water in summer is only too plentiful, the sloughs being all fresh; but in winter wells are the only way to be sure of a supply, the creeks and ponds generally freezing solid. The land is too flat to afford a head for water-power. The climate is the usual, but no frosts were observed the preceding summer. There is any quantity of wood for fuel, but no coal. Limestone in place was observed on sections 12 and 14. No minerals were discovered. Moose and caribou are abundant, and also small game, such as chickens, partridge and rabbits.—*H. B. Proudfoot, D.L.S., 1902.*

Range 9.

Township 19.—This township lies on the west shore of Lake Manitoba, and has a good slope to the lake, though much of it is very wet from the flow of water coming from the west. Most of the township is timbered with small poplar and willow, though there is some poplar 8 to 10 inches in diameter on sections 4 and 5, and some scattered poplar and a few spruce in the northern portion. The soil is generally a black loam 6 to 8 inches in depth on clay subsoil. An old cart trail to Manitoba House runs near the shore of the lake, but most of it was under water all summer owing to the high water in the lake, and from the same cause most of the settlers along the shore have been compelled to abandon their homes. There are some good hay meadows scattered

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE PRINCIPAL MERIDIAN—RANGE 9.

through the township, but no hay could be cut near the lake shore this year owing to high water.—*W. A. Ducker, D.L.S., 1902.*

Range 10.

Township 18.—The surface of this township is very much broken by marshes and shallow lakes. A well-defined gravel ridge 6 to 8 feet in height runs northerly through the eastern portion of the township and the trail to Kinosota is located on this ridge, making an excellent natural road-way. The soil is generally a good black loam 6 to 8 inches deep on clay subsoil, but owing to the lakes and marshes, the township (with the exception of that portion along the Kinosota trail) is almost inaccessible during the summer season. The timber is nearly all small poplar under 4 inches in diameter and mixed with willows. There are a few poplars 12 inches in diameter and under along the ridge and also some stunted oak 8 to 10 inches in diameter. Very little of the township is fit for settlement till the marshes are drained.—*W. A. Ducker, D.L.S., 1902.*

Township 19.—The Kinosota trail is located on a gravelly ridge 6 to 10 feet in height running northerly through the east half of this township. An almost continuous muskeg, averaging about 20 chains in width extends along the west side of this ridge, rendering the western portion of the township almost inaccessible in summer. There is a heavy slope from the ridge easterly, but the large volume of water which comes through by a couple of creeks and soakage spreads over it and keeps it in a wet condition most of the summer. The soil is generally a black loam 6 to 8 inches deep on a clay subsoil and is of good quality. The timber is mostly small poplar (mixed with willow) and fit only for fuel and fencing. There is some scattered spruce on the north half but not enough to be of any commercial value. This township would not be difficult to drain, when it would be well suited for cultivation.—*W. A. Ducker, D.L.S., 1902.*

Range 11.

Township 18.—The southeast quarter of this township is almost entirely covered by the Big Grass marsh and low hay lands adjoining the same. Almost all of the northeast quarter of the township is low land, partially timbered with willows and some small poplar on the low ridges. This quarter is much broken by marshes and shallow lakes. The west half of the township is level to gently undulating and generally timbered with small poplar interspersed with willow and scrub. A very small proportion of the poplar is over 4 inches in diameter. Grassy river flows southeasterly through section 6 and there are a number of shallow lakes with good water in this half of the township. Except in the marshes and low lands, the soil is generally a good black loam, 6 to 10 inches deep on clay subsoil. Some of the low ridges are somewhat stony. The west half of the township would be well suited for cultivation if Grassy river were improved so as to prevent its overflow. There is an immense quantity of hay on the east half and on sections 4, 9, 16 and 21, but almost the whole of this area was under water during the whole of last June, and unless Big Grass marsh is drained, settlers could not reside on it, though large quantities of hay can be cut every year. Sections 6 and 18 are occupied by settlers who have good improvements and considerable areas under cultivation.—*W. A. Ducker, D.L.S., 1902.*

Range 22.

Township 32.—Part of the township consists of sloughs, muskegs and flat land covered with a dense growth of willows. The muskegs are timbered with stunted

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE PRINCIPAL MERIDIAN—RANGE 22.

tamarack fit only for firewood and fence posts. The soil is a black muck with a sub-soil of sand. There is a strip of good land about 40 chains in width along the railway and along the south boundary of the township. There is also a strip of dry land timbered with small spruce, jackpine, tamarack, and poplar and balm of Gilead.—*John McAree, D.T.S., 1903.*

Range 24.

Township 24.—Sections 31, 32, 29, 30, 19, 20, 17 and 18, and the north halves of sections 7 and 8, are level, with tracts of poplar bush; trees up to 12 inches, mostly scattering; other tracts of small young poplar scrub and willow, with long grass in wet places. There are some open tracts with scrub patches, but very little open prairie; still there is a good deal of land that can be cheaply cleared, in fact most of it can. The sloughs met with with one exception were dry. There is sufficient wood for fuel and building on these sections to meet the want of the settlers for a good while to come. Section 5 and 6 and the south halves of 7 and 8 have had a good deal of timber, including spruce, but the fire has swept most of it some years ago. A thrifty growth of young poplar is coming up, and there is not much open country. In some places there is some limestone gravel in the soil, which is a strong clay loam. The cattle have a fine range through the bush, as grass is abundant. Good water is found by digging about 20 feet. The crops are good this year, although the backward spring put back harvesting time somewhat. This settlement is greatly favoured in being so near the railway, Grand View being only about eight miles by the section line from the northwest corner of the township.—*John McAree, D.T.S., 1902.*

Township 26.—The sections surveyed have a little timber on them, also small poplar and scrub, with prairie and hay sloughs. A spring rising on southeast quarter of section 6 flows eastward on to section 5, and furnishes an abundant supply of good water. This spring deposits a little bog iron ore. Grand View being only 10 miles distant, the settlers of this neighbourhood have no freight question, especially as the Canadian Northern railway will have a siding on the southeast quarter of section 1 in township 26, range 25, west of the principal meridian.—*John McAree, D.T.S., 1902.*

Range 25.

Township 26.—I surveyed sections 1, 2, 11, 12, 13 and 14 in this township. Section 2 and the south half of section 12 is taken up. The land is level, with numerous hay marshes. A general description would be level land, black clay soil in some places, and black sandy loam, in some others, clumps of poplar up to 14 inches, with young poplar and willow scrub, with prairie openings, hay sloughs, and with heavy grass among the scrub and willow, with somewhat extensive areas of bush on sections 13 and 14 and the northwest quarter of 12. The south halves of sections 1 and 2 were covered by a heavy poplar bush, which, with the exception of scattered trees, has been removed by bush fires. Settlers who secured land in this locality have been fortunate, since the Canadian Northern railway runs through sections 1, 2, &c., of this township. The land is fit for mixed farming or for ranching. Water can be had by digging about 20 feet.—*John McAree, D.T.S., 1902.*

Range 30.

Township 29.—Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 17, 18, 19 and 20 were surveyed. The remainder of the township is not so attractive for settlement, being covered with

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE PRINCIPAL MERIDIAN—RANGE 30.

brulé and windfall and having a second growth of young poplar and spruce coming up. It is for the most part good land, I believe, but has, of course, to be cleared before a crop can be grown. Sections 17, 18, 19 and 20 are partly rough and broken by the ravine of Little Boggy creek, but it was thought desirable to survey them on account of their ranching possibilities, being traversed as they are by the stream mentioned. The sections laid out are composed of prairie and bush, the later being almost exclusively poplar varying in size from mere scrub to trees of 12 inch diameter. Along Boggy creek there has been a growth of large spruce, poplar, tamarack, &c., but the valuable spruce has been taken by the lumberman and fire has killed the most of what was left. Along the valley of Little Boggy creek chiefly on the south side there are scattered small clumps or single trees of spruce and poplar which would furnish firewood or building timber, but altogether on the sections surveyed the amount of timber is comparatively small. Boggy creek rises in this township in a lake on sections 15 and 16 and expands into another lake which must be 150 feet below the prairie to the south. North of the lake the country is covered with brulé and rises still higher. The valley of the Little Boggy is about 200 feet below the surrounding country, and owing to the presence of water and hay meadows should have strong attractions for intending ranchers. The Little Boggy is a fine stream from 25 to 50 links wide with sweet water. In spring the volume of water is sufficient for driving saw-logs. There is a narrow belt of timber along it, spruce, tamarack, poplar, &c., most of which has been removed or killed by fire. There is an area of timber on sections 4 and 5 mostly poplar, with trees up to 10 and 12 inches in diameter. Exclusive of the Boggy creek and Little Boggy creek ravines, the part of the township surveyed is gently rolling with a soil of brown or black clay loam with a clay subsoil. It should yield excellent crops. In some parts there are a few scattered boulders, but this drawback is not serious, except perhaps over a few small areas. There are some hay sloughs with long grass in most of the poplar bluffs. Traversing the westerly portions of sections 6, 7 and 18 is an escarpment which is the easterly slope of a tributary to the Little Boggy creek from the south which crosses sections 6 and waters the valley through which the Canadian Northern Railway will pass. There are hay sloughs or meadows along the flats and the slopes themselves are not steep. The general aspect of the land is scrubby and bushy and might at first sight be unattractive to agriculturalists who have been used only to the open prairie. But the drawback arising from the increased cost of preparing the land for crop is, in the estimation of the majority of people, more than offset by the advantages which the presence of living trees and bushes insures. It is obvious that these lands being so near the line of railway must be rapidly taken up by settlers.—*John McAree, D.T.S., 1902.*

Range 32.

Township 30.—A notable feature in the topography of this township is Whitesand river, crossing it from southeast to northeast and dividing it agriculturally as well as topographically into three areas, viz.: the valley of the river itself, the important area on the west of this and the tract of high land in the northeast quarter of the township. The westerly tract comprises sections 5, 6, 7, 8, 18 and 19 and constitutes a sort of flat ridge along the west side of Whitesand valley, at an elevation of about 75 feet above the same. The surface is gently rolling and is composed of prairie and tracts covered more or less with poplar and willow scrub. The greatest development of prairie is in the southerly part, where are also the large hay sloughs. The poplar scrub areas are in reality tracts of brulé from which the timber was burned some years ago. The whole of this part of the township would appear to have been wooded to some extent for scattered dead poplar trees can be seen all over. There are a few sloughs, most of

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE PRINCIPAL MERIDIAN—RANGE 32.

them producing hay. The soil is a dark loam with a clay subsoil and is generally of excellent quality. The advent of the railway makes these lands very desirable. The land between Whitesand and Assiniboine rivers is level prairie with much scrub, willow, &c., and some areas of young poplar up to 3 inches in diameter. There are only a few scattered bluffs with trees large enough for firewood. The soil is the same clay loam but not uniformly as deep as on the ridge west of the Whitesand. There are a few boulders in spots along the old Pelly trail. There is fine land in parts of sections 29, 30, 31 and 32. There are a few hay sloughs, especially along the Assiniboine where the land is valuable chiefly on this account and for grazing. A flat stony tract extends between the Whitesand and the western ridge above described from the south boundary as far north as the point where the old Pelly trail crosses the river. The soil is rather damp and it is the poorest piece in the township, being open prairie.

The Assiniboine flows in its usual tortuous course across the township with banks from 6 to 12 feet high, with a narrow fringe of very tall and thick willows, including the grey willow species, which grows down to the water's edge. The current at low water appears to be feeble and we noted two rapids where trails cross. As already noted the extensive hay sloughs along the river afford good opportunities for ranching. There are a few western maple trees at points along the stream. The Whitesand is from 50 to 100 links in width with banks from 8 to 12 feet high and an easy current over a clay bed. At the shallow places boulders occur. The fringe of willows is light and in places altogether absent. The banks at the old Pelly trail crossing are pretty steep for a loaded vehicle. Altogether this township, or at least a part of it, is a valuable one for settlement, having the excellent farming area west of Whitesand river and the farming and hay lands of the other portions, the whole being well watered by the two large streams. An obvious drawback is the absence of timber. This would have to come from the Duck mountains to the east. There has evidently been at one time a poplar forest on the high land west of the Whitesand, but all that is left is a few scattered dry trees which are at the present time being removed to the Doukhobor village for fuel.—*John McAree, D.T.S., 1902.*

Range 33.

Township 30.—This is a fractional township adjoining the second meridian, being composed of a single tier of broken quarter sections. The east boundary was run parallel to the second meridian. The surface is high, open prairie with some scrub and a few hay sloughs. The soil is a fine clay loam and is all, or nearly all first class. The only timber is a very few scattered dry poplar. The whole township is good farming land.—*John McAree, D.T.S., 1902.*

TOWNSHIPS WEST OF THE SECOND MERIDIAN.

Range 1.

Township 34.—A rather rough trail crossing sections 36 and 35, known as the Swan river trail from Fort Pelly, is the best route for reaching this township. The soil is a rich clay loam of good depth, and remarkably free from gravel or sand, and will be well adapted for any kind of farming. Swan river flows through section 36, and as the valley of that river is from 250 to 270 feet deep, that and the adjoining sec-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 1.

tions are very rough. The remainder of the township is slightly rolling, and is mostly covered with scrub (which has mostly been killed by fire), with an occasional bluff of poplar or spruce. Scattered bluffs of spruce and poplar of small size were seen, but these would only supply the first wants of settlers. Marshes, which in a drier season might produce a large quantity of good hay, are found in many places within the township. The water in Swan river and in Spruce creek, a stream flowing through the southerly sections of this township, is very good, and will afford a permanent supply. The other smaller streams have a marshy taste, and cannot be relied on in a dry season, though some lakes do not probably become dry at any time. There are no streams of sufficient importance to give water-power of any value. The climate was good, except perhaps for the rather too abundant rainfall. The first frost was on August 26, but no harm seemed to be done by it. A limited quantity of wood can be found within the township, but for any permanent supply the settlers would have to bring it from the west. There is no exposure of rock and therefore no stone quarries. No minerals of any economic value were noticed. Signs of moose and deer were seen, but this kind of game is becoming scarce in this vicinity. On the other hand, ducks, chickens and partridge were very abundant in their season. An extensive fire swept over this country last spring, killing most of the scrub, consuming all dead brush and fallen trees, and thus leaving the ground clear of anything except dead scrub. No new growth afterwards started, and therefore a great part of this township is changing to prairie; and this change would be effectually accomplished by another fire. Even without another fire there would not be any great difficulty in clearing tracts on most of the sections. For this reason this township seems to offer such inducements that its early settlement is certain.—*Edgar Bray, D.L.S., 1903.*

Township 35.—A wagon trail from Fort Pelly enters this township in section 2, and passing through the township leaves again in section 31. This trail is rough or hilly in places, but it is easily passable with moderate loads. The soil is a deep clay loam of excellent quality, and is suitable for any kind of farming or stock raising, the former more particularly on the high lands and the latter in the valley of Swan river. Swan river enters this township near the corner of sections 31 and 32, and flowing southeasterly leaves again between sections 1 and 2. For about one mile on each side of this river the land is rough, and rises to an elevation of from 250 to 270 feet, and in this valley we found woods of small poplar with openings more or less scrubby, and occasional hay marshes. The land west of this valley is mostly slightly rolling, and covered by dead scrub. East of the valley the land is also slightly rolling, and covered with green scrub, with scattered bluffs of poplar. Poplar and spruce of fair quality are found in part of sections 31, 30 and part of 19. Poplar, also, is plentiful along and near Swan river, but it is too small to be of much value. No other timber of any importance was seen. Hay marshes can be found in almost any section. This year these were real marshes, but in a dry season the supply of hay should be sufficient for all purposes. The water in Swan river is fresh and very good, and may be relied upon as being permanent. Water from other sources has a marshy taste, and will probably disappear altogether in a dry season. The river has a current too slow to be of any practicable use as a water-power, and besides the volume of water is not sufficient in winter or in dry seasons for any such purpose. The climate does not appear to differ materially from that of the cultivated lands to the south except, perhaps, in the amount of rainfall, of which there was an abundance. A plentiful supply of fuel for present purposes can be got almost anywhere in the valley of Swan river, and it may also be procured in many places on the high lands. There are no exposures of rock, and consequently nothing in the nature of quarries. No minerals of any value were noticed. Traces of moose and deer were often seen, and ducks, chickens and partridges were abundant in their season. The valley of Swan river is, in many places, too rough for cultivation, though it will all be valuable for grazing purposes when it is cleared of

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 1.

scrub and brush. Even in its present condition a large number of cattle could find excellent pasturage along this river. On the other hand, the high land both east and west of this valley will attract settlers of the farming class, as it is mostly covered with scrub, which, generally, can be cleared off in less time and without the expense connected with the clearing of timbered lands.—*Edgar Bray, D.L.S., 1903.*

Range 2.

Township 34.—This township can be reached from Fort Pelly, by a trail which enters the township in section 2, or by crossing range 7 from the Swan river trail. The former is swampy but is the preferable route in dry weather, being shorter than the route via Swan river. The surface is generally slightly rolling and often broken by swamps, especially in the northwesterly sections. The easterly half of the township is covered with scrub with poplar or spruce bluffs, this scrub and many of the bluffs having been killed by fires. The westerly half is poplar woods alternating with scrub, with an occasional bunch or belt of spruce partly killed by fire. The timber lies chiefly in the western half of the township and is mostly poplar of small size, though small tracts of spruce of fair size, but partly dead, were seen in sections 32, 33, 34, 21, 22, 17 and 8. This timber will be of considerable value to settlers, both for building purposes and fuel. Marshes which will furnish excellent hay can be found in any section of the township, but they are generally of small size. A number of lakes and ponds in this township insure a permanent supply of good fresh water. There are no water powers. The climate does not seem to differ in any material respect from that of the country farther south, now successfully cultivated. The only available fuel is wood, of which there is a fair supply within the township. There are no stone quarries. No indications of any minerals of value were noticed. There are a few moose and deer in this locality, but large game generally is becoming scarce. Ducks, chickens and partridges were very plentiful and rabbits were numerous. The soil is suitable for any kind of farming, being a rich clay loam of good depth and generally free from stones and gravel. As more than half of this township is covered with dead scrub, no great expense would be incurred in clearing and preparing considerable tracts for cultivation, and for this reason this land is mostly well adapted for early settlement.—*Edgar Bray, D.L.S., 1903.*

Township 35.—The Swan river trail from Fort Pelly can be used for reaching this township. It is in some places rather rough and runs through the adjoining township to the east. The soil is a rich clay loam of good depth and is suitable for any kind of farming. The easterly part of this township, containing about one-third of the total area, is covered with scrub with scattered bluffs of poplar and some spruce, while the westerly two-thirds is a mixture of woods of poplar and scrub with some spruce bluffs. The surface is mostly gently rolling and swamps are often found. A limited quantity of fair spruce and poplar was found in sections 36 and 35, and again in sections 4 and 5. Elsewhere the timber is poplar with occasional spruce, of generally small size and of no particular value, except to settlers. Marshes were found in almost every section and, in a normal season, most of these could supply large quantities of hay of very good quality. The water may, generally, be called fresh but it has a marshy taste and cannot be relied on as being permanent. There are no water powers of any kind. An extra heavy rainfall seems to be a feature of this locality, but in other respects the climate does not appear different from that in the cultivated districts in other sections of the territories. Wood is the only fuel available and is found in considerable quantities almost everywhere. There is no stone suitable for quarries. No minerals of any value were found. A few deer, moose and bears may

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 2.

be found here but these animals are now scarce. However, ducks and partridge are very plentiful. The easterly part of this township is mostly covered with dead scrub and considerable tracts can be cleared without much expense. On the other hand, the westerly sections, containing about two-thirds of the township, being mostly timbered, is not so easy of access, but the value of the wood may be an inducement to settlers and others. However, excepting the marshes, the whole township is excellent land and singularly free from stones or gravel. Frost was first noticed on August 26th and frequently thereafter.—*Edgar Bray, D.L.S., 1903.*

Township 36.—(East outline.)—This section is reached by a rough but passable trail from Fort Pelly known as the Swan river trail. The soil is a good clay loam, suitable on the high lands for grain growing or mixed farming, though the valley of Swan river is too rough for cultivation, but might be used for stock raising. The whole line runs through either scrub or woods of small poplar, with occasional bluffs of larger trees. The timber is of little commercial value, but it will be an advantage to settlers. Hay swamps are not plentiful, though where found the grass is generally of good quality. Swan river and a tributary stream flowing through section 6 will give a permanent supply of good fresh water. Swan river does not produce any water-power. The climate is about the same as is found in the cultivated districts farther south. The only available fuel is wood, which is easily found in quantities sufficient for the present use of settlers. No fixed rock, and nothing suitable for quarries was seen. I found no mineral of any value. Moose, deer and bears were noticed, but large game is scarce, while ducks, chickens and partridges are plentiful in their season.—*Edgar Bray, D.L.S., 1903.*

Range 3.

Township 34.—This township is an excellent one for farming and stock raising. Numerous sloughs and hay marshes supply large quantities of hay for feed, while the dry land, although covered with scrub, will be easily cleared, and will make first-class agricultural land. A trail coming into the township near the centre of the south boundary from the Yorkton and Pelly trails leads up through and ends near the centre of the township on the north boundary. The soil is a black vegetable loam resting on a clay subsoil, and is well adapted for grain growing. The surface is gently rolling, and scrubby on the east half and the northwest corner. Some patches of prairie interspersed with scrub exist in the centre of the township and the southwest quarter. Some spruce timber suitable for building logs occurs along the edges of the sloughs, but not in large quantities, and considerable of it, fire-killed, may be found on several sections, but mostly on sections 12 and 1 and in the east half of 2. Considerable quantities of hay are found on every section in the numerous sloughs, but principally on sections 9 and 16. These hay sloughs are this season, at this date (July), too wet to cut. Water is all fresh and good. There are several small creeks, the main stream being the west branch of Stony creek. The creeks and sloughs, in most cases, are likely to dry up in a dry season, judging from the fact that the sloughs have old grass or dead grass roots in the bottoms. The shores of the creeks are liable to flooding, but this in the proper season gives a large growth of hay. The supply of water is not continuous enough to furnish any water-power. The climate has so far been similar to that of Manitoba, but was very rainy through July. Fuel exists on nearly every section, consisting of fire-killed poplar poles and green growing scrub. No stone quarries were seen, but boulders may be got in the beds of the creeks. No minerals of any kind were observed. Not much game except a few ducks were seen. Plenty of raspberries and gooseberries are found, and some black-currants. The low places in this township could be drained.—*John Francis, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 3.

Township 35.—This township can be reached from the south by following the east bank of the west branch of Stony creek to the north boundary. Its condition in wet weather is not good. The soil is mostly a black vegetable loam, 6 to 12 inches in depth; subsoil gravelly clay. The surface is gently rolling and very scrubby, with numerous flats and sloughs. There is not much timber and any large poplar that there is is rotten at its heart. In ordinary dry seasons the sloughs will furnish abundance of hay, but they are all too wet to cut at present. All water is fresh, and is in liberal quantities this summer. The west branch of Stony creek enters the township on section 34, and flows south and southwesterly, leaving it on section 4. Its shore in places is subject to flooding, but to no great extent. There is no water-power. Summer climate for this year has been very rainy; light frost August 22 and 26 and September 4. There is an abundance of poplar; poles and willows for fuel may be procured on every quarter section. No stone quarries were found, but there are some few boulders, mostly limestone. No minerals were observed. Very little game was seen, but evidences of deer and bear were plentiful. Fruit, raspberries and cranberries are found in considerable quantities in places.—*John Francis, D.L.S., 1903.*

Township 36.—This township is scrubby, with numerous sloughs and low places. The soil is clay, with a covering of light vegetable mould 2 to 3 inches in depth. The surface is gently rolling, and some boulders are found. There is no regular trail to reach this township, but one may be made from the south along the centre meridian. The surface is gently rolling and scrubby, the eastern row of sections containing some poplar fit for cordwood, but no timber of any value except for fuel. Numerous sloughs are found all over the township, but all too wet to cut this season. Water all good and plentiful, but no water-power exists. Climate.—Light frost on August 22, but generally similar to northern Manitoba. Fuel.—Small poplar, both green and dry, may be had on every section. No stone quarries were found; a few large boulders, mostly limestone were seen. No minerals of any kind were met with. A few ducks, many partridges and rabbits were the principal game seen.—*John Francis, D.L.S., 1903.*

Range 4.

Township 35.—The best way to reach this township is by trail up the north and west banks of Assiniboine and Etoimami rivers to Wright's ranch on sections 24, 35 and 5; thence easterly on pack trail to Kop creek; along the west side of this creek the country is more or less open and a team can be driven either north or south. Soil is a clay loam 2 to 15 inches deep on a gravelly clay subsoil and is well adapted for mixed farming. Surface is gently rolling and is more or less scrubby. There is very little timber left, a few building logs may be obtained in different places on the two eastern tiers of sections. There are many small hay marshes, hardly a quarter section without one or more. All water is fresh and good. Kop creek flowing southerly through the township is a fine stream having an average width of 12 feet, with 12 inches of water and current $2\frac{1}{2}$ miles per hour. Very little land along this stream is subject to flooding. At the present time the supply of water is continuous. A water power could be obtained on section 4, as the valley narrows on this section. Climate is similar to Manitoba. May and June were dry, but there was plenty of rain during the rest of the summer. There is an abundance of fuel, both dry and green poplar, plenty may be found on every section. No minerals or coal were observed. No stone quarries were seen, but there are plenty of boulders, both limestone and granite, along the bank and bed of Kop creek. Prairie chicken and rabbits are plentiful. A few ducks, tracks of moose and jumping deer were seen.—*John Francis, D.L.S., 1903.*

Township 36.—To reach this township a trail can be made easily along the west bank of Kop creek from the south to the north boundary of the township. This can

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 4.

be driven over at present in dry weather. The soil is mostly a clay loam, covered with a vegetable loam of 3 to 12 inches and is suitable for mixed farming. The surface is gently rolling and is very scrubby over all the township. There is plenty of small poplar fit for fuel and it can be found on every section. There are numerous hay marshes, some on every quarter section, but wet at this time of the year (June 10). Water is all fresh and in abundance, but no water power. Light frost June 10 and 13, but climate is similar to that of Manitoba. No coal was seen or other minerals. No stone quarries but boulders may be got along bed and bank of Kop creek. Prairie chicken and some duck and traces of moose and jumping deer were seen.—*John Francis, D.L.S., 1903.*

Range 6.

Township 33.—A fairly good trail from Good Spirit lake which passed on sections 2, 3, 10 is the best way to reach the township. The soil is clay with from 5 to 10 inches of black loam very suitable for farming. The township has a gently rolling surface with patches of prairie and scrub, being a little more broken in the northeast part. There are some scattered bluffs of good poplar fit for building on almost every section. Hay of good quality is found in abundance in the numerous sloughs and along the creeks. Crooked Hills creek in the northeast and Spirit creek in the southwest give an abundant supply of water. The climate is the same as northern Manitoba. There is no water-power, no coal, no stone quarries and no minerals in the township. Poplar for fuel is not yet scarce in any part of this township. Prairie chicken, grouse and rabbits compose the game. Mr. Richard Mitchell squatted on section 15 five years ago; he has a house and stables. He owns 5 horses and 75 head of cattle. He has lately opened a general store and made application for a post office. Almost every homestead in this township was taken up by Galicians last summer.—*P. T. C. Dumais, D.L.S., 1903.*

Township 34.—A fairly good trail from Yorkton passes on sections 1, 12, 13, 24, 25 and 36. It is the easiest way to reach this township. The surface is gently rolling, being more broken along Conjuring creek, where patches of prairie are found, especially in the eastern part. There is some good poplar fit for building on almost every section, and some 200 or 250 spruce averaging from 8 to 20 inches in diameter scattered on the northwest part. Second growth poplar, willows and scrub cover the whole township. Good hay is found in quantity in the numerous sloughs throughout the township. A good and permanent supply of water is found in Conjuring creek and Horse creek in the north half of the township. The climate is the same as that of northern Manitoba. There is no water-power, no stone quarry, no coal and no economic minerals in this township. Dry poplar spruce and tamarack are found on almost every section, for fuel. Game is represented by partridge, prairie chicken, rabbits, mink, muskrat, &c.—*Paul T. C. Dumais, D.L.S., 1903.*

Township 35.—A wagon trail from Yorkton, which is fairly good, is the easiest way to reach this township. The soil is clay, with a few inches of black loam, and in many places gravel is found. The surface is gently rolling, being somewhat broken along the Assiniboine river and the lakes along it. It consists of patches of prairie on both sides of the river, and small timber and scrub in the northeast and southwest corners. Poplar from 6 to 15 inches in diameter is found on sections 1, 3, 4, 9, 10, 15, 16, 17, 20, 21, 29, 22, 28, 33, 32 and 31. Some spruce are scattered along the river. Hay in ample quantity and of good quality is found in the numerous sloughs throughout the township and along Robinson creek. Water is fresh and permanent. The Assiniboine enters this township on the northeast quarter of section 33 and flows through it in a southeast direction to the southeast quarter of section 12, where it crosses the east boundary of the township. It again curves in for a few chains on

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 6.

section 1. Water in Lake Lomond is very high this year on sections 10, 11, 12, 1 and 2. The squatters were not able to make any hay in the bay at the northwest end, which in dry years is a hay meadow. The outlet is at the southeast end on section 1. Robinson creek enters the township on section 31 and empties in Lake Lomond on section 10. Its average width is 15 feet and depth 4 feet. Of Lake No. 4 on sections 28 and 21, not much can be said, except that it was covered with gulls while I surveyed it. It has an inlet and outlet which flows into Robinson creek. Lake No. 3 on section 14 has no inlet nor outlet, but it is supposed to connect with the Assiniboine by an underground passage, as it keeps the same level as the river. It is 58½ feet deep at about the centre. The river and these three lakes are full of fish, consisting of pike, pickerel, carp or gudgeon. The Assiniboine is from 40 to 100 feet wide all through this township, and on sections 27 and 22, it widens into two lakes, which I numbered 1 and 2. There is one small rapid on section 23, but is of no consequence. The climate is the same as that of Manitoba. There was frost last summer, but the same thing happened throughout the west. Fuel consisting of dry spruce and tamarack, poplar and cotton wood is found almost everywhere. There is no coal, no stone quarries and no minerals in this township. Game is represented by ducks and grouse, but prairie chickens and rabbits are also plentiful. Robinson Bros. squatted on section 11, seven years ago; they own some 300 cattle and 20 horses. They have broken some land on section 14, which gave them a fair crop this year.—*Paul T. C. Dumais, D.L.S., 1903.*

Township 36.—A fairly good trail from Yorkton passes on sections 24 and 23, township 35, range 6, from where it is easy to reach the southern sections of this township. The soil is clay, covered with 3 to 6 inches of black loam. I found gravel in many places. The southeast part is more suitable for farming. The township has a gently rolling surface, more broken near the Assiniboine. A small mountain on section 20, some 300 feet high, is called 'the Mound.' The township is covered with thick poplar bush in the northern and western parts. The southeastern part is covered with small poplar and willow scrub. There is prairie on sections 4, 9, 17 and 8. Poplar 8 inches in diameter covers the north half of the township, and sections 6, 7, 18 and 15 and parts of sections 5, 8 and 16 are also covered with poplar, some of which is good for building. Hay of good quality is found in the numerous sloughs throughout the township. Assiniboine river enters the township on southwest corner of section 30 and flows through it in a southeasterly direction. It leaves the township on southeast quarter of 4. It contains a few small rapids of no importance. Its depth varies from 3 to 15 feet; its width from 40 to 100 feet; current 1 to 5 miles per hour. There is no water-power and no land subject to flooding. The climate of northern Manitoba prevails here. Poplar for fuel can be found in abundance. There is no coal, stone quarries or minerals in the township. Prairie chicken, grouse and rabbits constitute the game.—*P. T. C. Dumais, D.L.S., 1903.*

Range 7.

Township 33.—A fairly good trail from Yorkton passes on sections 2, 3, 10, 15, &c., of township 33, range 6, from where it is easy enough to reach this township. The surface, which is gently rolling, is covered with a dense second growth of poplar and willows. Numerous bush fires have destroyed the big timber that was there some years ago. The climate is the same as northern Manitoba. There is no coal, no stone quarries, no water-power and no minerals in this township. The soil is black loam averaging from 4 to 10 inches, with clay subsoil and is suitable for farming. Red deer and elk were seen while I was surveying this township. Good fresh water is found in sufficient quantity and is permanent in the numerous sloughs and small creeks.—*Paul T. C. Dumais, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 7.

Township 34.—A trail which is fairly good from Yorkton passes on sections 1, 12 and 11, township 35, range 6. From section 11 a hay trail leads to section 5 and 6 from where the northeastern part of township 34, range 7, is of easy access. The surface is gently rolling, being more broken along Conjuring creek and chiefly covered with a thick growth of young poplar and willows, with scattered spruce averaging from 6 to 18 inches. The soil is clay, covered with from 2 to 8 inches of black loam and in some places gravel is found. I do not think this township suitable for farming. Hay in small quantity is found along Conjuring creek and its branches. A good permanent supply of water is furnished by this creek, which is from 20 to 25 feet wide and 2 to 6 feet deep. The climate is the same as in northern Manitoba. There is no water-power, no stone quarries, no coal and no minerals in this township. Dry poplar and spruce for fuel are found on every section. Game is represented by red deer, antelope (jumping deer) and elk. Traces of bears were also seen.—*P. T. C. Dumais, D.L.S., 1903.*

Township 35.—A fairly good trail leads from Yorkton to section 11, township 35, range 6, and from there a hay trail to section 5 and 6, township 35, range 6, from where range 7 is comparatively easy of access. The soil is yellow clay with 2 or 3 inches of black loam, which, I think, is suitable for farming. The surface is gently rolling and scrubby in the southern half, while the northern half is covered with a thick bush of poplar averaging from 4 to 18 inches in diameter. Hay is found only in the southeastern part and not in great quantity. Water supply is sufficient and permanent. The climate is the same as northern Manitoba. There is no water-power, no coal, no stone quarries and no minerals in this township. There were some bears in the north of the township and tracks of elk, foxes, mink, &c., were also seen.—*Paul T. C. Dumais, D.L.S., 1903.*

Range 8.

Township 24.—The most part of this township is settled by Galicians and a few English-speaking people. These last settled there a good many years ago, and raised cattle, but now all are engaged in farming. Timber for building is found only in sections 31, 32, 28 and 29, but any amount of willow used for fencing has been cut and lots more of the same is available. The soil is first-class, and good for all agricultural purposes, and is peculiarly suited to the Galicians, as it is rolling, and the soil alternates from sandy to sandy loam, allowing them to raise any kind of vegetable. The soil, however, is first-class. The most part of this township might be very dry in a dry year. All the Galicians seem to be prosperous, and pleased with their farms and new surroundings.—*A Bourgeault, D.L.S., 1903.*

Township 33.—The east and north outlines are entirely covered with poplar from 2 to 4 inches in diameter, with willow and poplar brush. The soil is black loam, with sandy clay subsoil. Hay can be found in nearly every marsh, but only of a medium quality. Ducks, partridges and prairie chickens are in good number.—*J. F. Richard, D.L.S., 1903.*

Township 34.—This township varies from nearly level to gently undulating, and is entirely covered with a young growth of poplar of 2 to 4 inches, with very strong willows and poplar brush. In the western half a heavier growth with larger poplar is found. The soil is mostly black loam of from 2 to 4 inches depth, with a good sandy clay subsoil, and is very well adapted for general farm purposes. Hay can be had in nearly every slough and marsh, but of medium quality. Several small creeks run through the township in an easterly or southeasterly direction. The water is good. No water power, no minerals of any kind or stone quarries were found. Wild ducks, partridge and prairie chickens are in good numbers. The last frost was on June 8 and the first on September 8. Winter set in about the middle of November.—*J. F. Richard, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 8.

Township 35.—The township is accessible by the trail from Sheho, Assa., to Stonewall lake, going as far as Mr. Walter Tullock's by following the south shore of the lake, then in an easterly direction to township 33, range 8, and then due north to township 35. The trail is fairly good up to Mr. Tullock's, but beyond is very rough, having been opened by myself. This township is generally slightly undulating, and the soil is a good sandy clay. Sloughs with good water are very numerous. It is well wooded, with a thick second growth of poplar from 1 to 6 inches in diameter, and poplar and willow brush, with a few bluffs of spruce. Hay is found in nearly every slough, but of only medium quality. Two or three creeks with good water flow through the township in an easterly and south-easterly direction. There is no water-power, no minerals of any description and no stone quarries. The summer was very wet. The last frost was on June 7 and the first on September 8. Wild duck, partridge and prairie chickens are in good numbers, and indications of moose and bears were seen. This township is well adapted for general farming purposes.—*J. F. Richard, D.L.S., 1903.*

Township 36.—The route to follow to reach this township was described in township 35, range 8. The soil is of a good quality, being sandy clay and most suitable for general farming or raising cattle. Sloughs, marshes and willow swamps, with fresh water, are very numerous. This township is gently undulating and mostly covered with poplar from two to four inches and poplar and willow brush. On section 36 and part of section 25 the poplar is large, some up to 18 and 24 inches. In sections 6, 7, 18, 19 and 17 patches of prairie were met, and 18 and 19 are mostly prairie. In the northwestern part of this township numerous spruce swamps exist with clumps of spruce 8 to 12 inches in diameter. Hay is found in hay marshes or sloughs, but not in great quantity or of a very good quality. The creeks running through this township have fairly good water and are permanent, their average width is 6 to 10 feet with a depth of 18 inches and current one and a half miles per hour. The summer was very wet and warm, especially during July and August. The last frost was on June 8, and the first at the beginning of September. The fall was very fine, and the first snow came about the middle of November. For fuel wood is plentiful through the whole township. No minerals of any kind were seen and no stone quarries. Wild duck, prairie chickens and partridge are plentiful; also traces of moose and bears were seen.—*J. F. Richard, D.L.S., 1903.*

Range 9.

Township 24.—The most part of this township is settled by Galicians, there being few English-speaking people. All are engaged in mixed farming. There is no timber worth mentioning, the only poplar valuable for building being in small scattered bluffs. Generally speaking, the country is rolling and covered with scrub. The soil is rated first-class, and is good for all agricultural purposes, particularly for the requirements of the Galicians, as it alternates from a sandy soil to a sandy loam suitable for raising all kinds of vegetables, which constitute their principal food. I believe that these people will become good farmers.—*A. Bourgeault, D.L.S., 1903.*

Township 35.—This township is rolling country, more or less bushy and scrubby, in some places overgrown with poplar brush averaging from three to four inches in diameter; however, there are some poplar bluffs good for building, especially on sections 2, 6, 7 and 18, the remainder of little use except for rails. There are also a few scattered dry spruce, some of them windfall. As to the soil, it ranks first-class, but taken altogether it is not very well adapted for farming purposes owing to the numerous sloughs and swamps which, however, are good for either hay or pasture. Sections 30, 31 and 32 are pretty well adapted for farming land. The water either in sloughs or lakes is splendid. If this township were completely burned over the land would become valuable for farming purposes.—*A. Bourgeault, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 9.

Township 36.—This township is more or less bushy, the timber for building is very limited, but large quantities of fence rails can be cut. The surface is rolling, with a slope towards the north boundary. There are some very fine spots of prairie. Owing to the extra quality of the soil in this township, a fire to clean off the growth of scrub is very desirable. I saw last fall after the survey an example of the way in which this can be done by fire. There are some creeks verging northwest which with a little work will largely help the drainage of the south part of the township. The water either in creeks or sloughs is good; I did not notice the slightest taste of alkali. According to my experience, it is a particularly good township for mixed farming, as large quantities of hay can be secured in the numerous sloughs and hay marshes and also from hay land.—*A. Bourgeault, D.L.S., 1903.*

Range 10.

Township 35.—This township is all bush or brush. The sections 17, 18, 19, 20, 21 and west half of 16, might be kept as a timber reserve, the poplar being good and averaging from 10 to 15 inches in diameter. The advantage of keeping these sections as a timber reserve is that they are nearly surrounded by lakes, marshes and swamps, which would be a good protection from fire. The soil is rated first class, being black loam alluvial soil and clay loam subsoil. Firewood and building timber are easily procurable. The water everywhere in this township is very good.—*A. Bourgeault, D.L.S., 1903.*

Township 36.—This township is pretty bushy; large quantities of rails and some timber fit for building can be secured especially on the west part. There are two or three bluffs of spruce good for lumber in sections 17 and 20. The soil ranks first class, being a good black loam of a satisfactory depth and clay loam subsoil; there are no stones whatever. At the time of the survey it was very wet and all the sloughs were filled, and the low land was submerged. The north half of this township, up to half a mile from the base, slopes towards the north; this will be in the future a great help for drainage. The enormous work done a good many years ago by the beavers has had the effect of storing the water and keeping a good portion of the south half under water, but to-day with comparatively little work the greater part can be drained. In a short time, I presume, the fire will sweep up all the wood that remains and will leave a cleared open prairie. The water is very good either in the sloughs or creeks, and a plentiful supply of hay can be secured. Taken as a whole, this township in a short time will be a fair one for agricultural purposes. I met some people during the survey looking up farming land.—*A. Bourgeault, D.L.S., 1903.*

Range 11.

Township 27.—It is easy to reach this township by a trail running northeast from Qu'Appelle or by a trail running south from Foam Lake post office; both are frequented and in good condition when the season is not too wet. The soil is generally black loam to a depth varying from 3 to 12 inches with clay subsoil in the west half of the township. The east half is more sandy and gravelly. A rancher squatted on section 17 six years ago. He owns some sixty horses and two hundred and fifty cattle. He told me that he never had any success in farming. If this is true, it would prove that this township is better adapted for ranching than for cultivation. The surface is rolling and in the south part is more broken by small knolls and ranges of hills. There are some patches of prairie in the southwest part. The north is more timbered and covered with scrub of small poplar and willows. There are many bluffs of good

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 11.

building poplar, scattered throughout this township, especially on sections 30 and 31, where trees of 12 and 15 inches have been cut. Any quantity of fuel can be found on almost every section. Hay is plentiful on every section on account of the numerous sloughs that are met with all over the township. Water is fresh and good everywhere except in Horse lake, where it is alkaline. The supply seems permanent. However, it is said that some seven or eight years ago, cattle could be watered in Horse lake only. There is no stream or creek of any consequence only a watercourse running southeast into Veilleux lake, (named after the man who first saw it), which is crossed by the north boundary of section 25. Wet seasons make the country soft, but it is too high to be flooded. As to climate, summer frosts are frequent and are the drawbacks for the culture of cereals. There was still frost in the ground, eight inches from the surface, on the 10th of May. There is no water power. The only kinds of wood for fuel are poplar and cottonwood; much of it is lying on the ground where the fire passed. No mine or quarry exists in this township. Game is plentiful; duck, prairie chicken, grouse, crane, geese and wild turkey abound, especially in the fall.—*Paul T. C. Dumais, D.L.S., 1903.*

Range 12.

Township 37.—The soil throughout consists of a rich black loam with a subsoil of clay. The land, however, at the time of the survey was covered with large sloughs of deep water. A small creek coming from the southeast into section 3 overflowed its banks and in consequence all the low lands were flooded. Old settlers assert that some seven years ago there was not a drop of water where to-day a large and deep lake covers part of sections 32 and 29. This lake has been surveyed but the large sloughs were not traversed. There is a considerable quantity of poplar bush, but nothing of great value. The timber consists entirely of poplar of an average of 4 inches in diameter. The country is covered with thick brush and willows. There is no mineral of any kind. I may state that in my opinion, if the creek above mentioned were enlarged and deepened, a great portion of the numerous sloughs could be drained and a very large quantity of hay would then be available.—*A. F. Martin, D.L.S., 1903.*

Township 38.—The land rises like an amphitheatre from the centre eastward and westward. Pipe creek comes in this township in section 3 and empties into Nut lake in section 32. The water in this creek is good. At the time of the survey, water ran over the bank of the creek and flooded the adjoining lands. There is a good fall to Nut lake and it is believed that all the wet land can be drained, thus providing a large area of first class hay lands now inaccessible on account of the overflow from Pipe creek. The soil consists throughout of a rich black loam with a subsoil of clay and would rate first class but for the numerous stones covering the lands. There is no timber of any great value for commercial purposes, but there is a good quantity of timber very useful to settlers both for building and fencing purposes. The two eastern tiers of sections are well wooded with poplar varying in size from 3 inches to 6 inches in diameter. The land throughout is very scrubby. The northern part of the township or at least the greatest part thereof, is reserved for the Indians. This reserve is bounded on the south by a straight line across part of sections 26 and 29 and across sections 27 and 28; to the northeast by Prairie Butte creek running to the correction line through sections 34 and 35 and to the northwest by Pipe creek and Nut lake. There is no sign of any minerals.—*A. F. Martin, D.L.S., 1903.*

Township 45.—This township is difficult to get into by trail. I succeeded by following up the trail from Fishing lake running north by Nut lake to Barrier river crossing then to Crooked plains, thence along the easterly boundary of the range. This can be accomplished only in the dry part of the season. The Canadian Northern Railway will probably be completed this year through the centre of the township and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 12.

this will afford a better means of access. The soil is generally shallow leaf mould. It is not at present adapted for any agricultural industry. The surface is generally level but rolling gently in places. It is more rolling on the southwest quarter of the township. There is no prairie, for the township is timbered all over with much broken poplar, with dense willows, hazel and other scrub. There is much spruce scattered throughout varying from 4 to 30 inches in diameter and a great deal of muskeg, especially in the northeast quarter, covered with several feet of moss and below this ice all the year round. The only good hay is to be found on the boundary of sections 5 and 6, where there are about 15 acres. The water is good, the streams generally running northerly. Crooked creek, the largest being seven feet wide and two feet deep with sluggish current, flows through sections 5 and 6; it overflows its banks and perhaps 30 or 40 acres of these sections. The indications are that the winter commences here several days earlier than it does 100 miles further south. I saw no marked indications of summer frosts. The fuel is the timber before mentioned, there being no indications of coal or lignite. There are no stone quarries or minerals. Partridges, marten and mink are numerous; a few moose and bears are found. Prairie chickens are seen very rarely.—*John J. Dalton, D.T.S., 1902.*

Range 13.

Township 37.—Access to this township is via Sheho, the present terminus of the Manitoba and Northwestern branch of the Canadian Pacific Railway. The road is fairly good except in wet seasons like the past year. The soil is a rich black loam underlaid with clay and is very fertile. The surface is gently undulating, very much broken by ponds, sloughs and marshes. The latter in moderately dry seasons would produce hay of good quality in large quantities. Surface water is everywhere present with some drainage coulees but no streams of any size. Grains mature in adjoining townships and the locality does not appear to be subject to summer frosts. Dry poplar suitable for fuel abounds in all parts of the township and green poplar suitable for building logs may be obtained in the bluffs. The larger part of the surface is covered with scrub poplar and willow second growth. No minerals nor outcrops of rock were seen. Ducks, prairie chickens and partridges are plentiful, while the ponds and marshes seem literally alive with muskrats.—*Thos. Fawcett, D.T.S., 1903.*

Township 38.—Access to this township at present is via the Manitoba and Northwestern branch of the Canadian Pacific Railway to Sheho, thence by wagon road to Nut lake and an old Indian trail which runs westerly through the township to Ponass lake. The soil is a black loam, underlaid with a clay subsoil. In quality the soil is very productive. Where not covered with water the greater portion of the surface is covered with scrubby timber of poplar and willow. Some bluffs contain trees large enough for building and fencing purposes, while there is a good deal of poplar (fire-killed) suitable for fuel. Many of the ponds which last season were filled with water in ordinary seasons would supply hay enough for all purposes of local ranching. In wet seasons hay lands would be scarce. Fresh water is abundant in sloughs and ponds, but there are no running streams in the township. Climatic conditions seem favourable for the maturing of both vegetables and cereals. There are no indications of coal nor of minerals of any description, but fuel will be plentiful in the shape of dry poplar for many years to come. Owing to the nearness of Nut lake Indian reserve, large game is pretty well hunted out, but ducks, partridges and prairie chickens are plentiful. Muskrats, sable, foxes and mink are the fur-bearing animals.—*Thos. Fawcett, D.T.S., 1903.*

Range 14.

Township 31.—This township may be reached by the trail from Fishing Lake post office to Touchwood hills, which passes through the southeast corner of the township.

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 14.

I believe there is now a new trail from Foam Lake post office which is rather shorter for parties going in from all points east. The soil is generally light, black and loamy, averaging 10 or 12 inches in depth, with a subsoil varying from light sand to heavy clay, suitable for mixed farming. The surface is gently rolling prairie, with numerous small sloughs generally with a great deal of poplar and other scrub scattered in patches throughout the township. On section 19 there is about 10 acres of poplar timber averaging 10 or 12 inches in diameter; besides this there are only a few trees scattered over the country. Hay is well distributed generally, but is not found in large areas. The quality is good. The water is good and fresh, but greatly in excess at the time of survey and streams were overflowing their banks. The main streams were about 5 feet deep, whereas in their normal conditions they would average about 25 links wide and 12 inches deep. I do not think the lands are liable to be flooded beyond what the field notes show. There are no water-powers or mill sites. There is nothing remarkable in the climate, and no summer frosts were observed during my stay in the vicinity. The only fuel procurable is the poplar in this and the adjoining townships, which is plentiful though small. There is neither coal nor lignite, and no stone quarries or minerals. Small game such as prairie chickens and ducks is plentiful. Small deer and foxes were seen. There is no sign of fish in the streams, which is said to be a peculiar fact with regard to all streams running into the Quill lakes.—*John J. Dalton, D.T.S., 1902.*

Township 34.—This township is open prairie, with the exception of patches of willow and a few scattered bluffs of dry poplar hardly worth mentioning. The soil is for the most part black loam and clay subsoil, good for any purposes of farming, though in the north tier of sections the soil is a heavy clay. It is well watered by creeks and marshes of good water. The Little Quill lake in the southwest corner occupies about ten sections. Along the margin of the lake quantities of hay can be secured. The banks of the lake are composed of boulders and gravel.—*A. Bourgeault, D.L.S., 1902.*

Township 37.—Access to this township is via the Manitoba and Northwestern branch of the Canadian Pacific Railway to Sheho, thence via Nut Lake trail to a point within 7 miles of the township. The Canadian Northern Railway is within 12 miles of the northwest corner. The soil throughout is a rich black loam, with clay subsoil. The surface is generally level, with few undulations. During the past season a considerable percentage of the flat ground was covered with water. The entire area not under water, with the exception of a few spots, is covered with scrub timber, most of it second growth; the larger timber having been killed with fire some years ago. There are some clumps of poplar reaching 12 inches in diameter, while the second growth seldom exceeds 6 inches in diameter. In ordinary dry seasons a large quantity of hay would be procurable along the margin of Ponass lake and the adjoining sloughs. Fresh water is abundant in lakes and ponds; there are no streams of any considerable size, but there are drainage coulees towards the south. Vegetable growth is luxuriant, with no indications of injury from summer frosts. Dry poplar for fuel is plentiful in all parts. No outcrops of rock nor of any minerals of economic value were seen. The lakes and ponds were alive with ducks and other water-fowl, while prairie chickens and partridges are plentiful in the woods and brulé portions of the township. Ponass lake seems to be the home of the muskrat; their houses may be counted by thousands in the shallow places.—*Thos. Fawcett, D.T.S., 1903.*

Township 38.—This township is reached from Nut lake by an old trail which runs from there to the Quill plains, in dry seasons by crossing a narrow point of Ponass lake. The road is good enough in ordinary seasons. The soil is a rich black loam, with clay subsoil suitable for growing anything requiring a very rich soil. The surface, where not covered with water, is nearly all timbered with poplar and willow, the former running up from saplings to a diameter of 10 or 12 inches. There are some patches of fire-killed timber, in which only the small trees are green. When not wet,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 14.

an abundant supply of hay would be obtainable along Ponass lake. During the past two or three years the lake has overflowed its usual limits. All the water in lakes and ponds is fresh in wet seasons, but in dry seasons it is more or less alkaline. There are no streams or waterfalls in the township, but the water seems to flow out of Ponass lake both northeast and southeast, so that it forms a sort of watershed. The lake, which extends the full length of this township and nearly 4 miles down into the township to the south, covers more than one-third of the entire area. The climatic conditions seem all right for ripening vegetables and grains. Dry wood suitable for fuel is pretty general. No indications of coal, outcrop of stone nor indications of minerals of economic value were observed. What is now Ponass lake would be very valuable meadow land if drained, and might be considered nearly as valuable as the higher portion of the township, as the cost of draining would not be such a large item, considering the large area which could be reclaimed. The ponds and lakes during open water are covered with ducks and the woods well stocked with grouse, while the whole place seems literally alive with muskrats, skunk, mink and foxes.—*Thos. Fawcett, D.T.S., 1903.*

Range 15.

Township 34.—The only portions of land good for any farming purposes in this fractional township are sections 36 and 35; the north half of section 34 ranks 1st class as hay land. The balance is alkaline. The shores of Little Quill lake are generally gravelly, and at some places big boulders of reddish colour are piled up.—*A. Bourgeault, D.L.S., 1903.*

Range 16.

Township 26.—The two southern rows of sections in this township have been greatly opened by fire, and they are now mostly ready for settlement. The soil is fair, except in the vicinity of the Indian reserve, where the land becomes hilly and much broken by sloughs and partly covered with a second growth of poplar and willows. As to the centre row of sections comprising sections 13, 14, 15, 22, 23 and 24, they are still covered with dry poplar mixed with a thick second growth of young poplar and willow. The land becomes very hilly near the reserve and is all through much broken by lakes and sloughs. The soil also decreases in quality. The timber found in this township is mostly all dry and good only for firewood and some building purposes.—*P. R. A. Belanger, D.L.S., 1903.*

Township 37.—The southern two miles of the township is covered mostly with a thick growth of willows and scrub, and the northern four miles is thickly wooded with a second growth of poplar. Here and there a bluff of poplar trees four and five inches diameter is found. The timber would be of great benefit to intending settlers for building, fencing and fuel purposes. The soil consists of a rich black loam with a sub-soil of clay. There are numerous potholes, sloughs, and also large sloughs. Good water is very hard to get. Hay can be found in small quantities in and about the sloughs. There is no sign of any minerals.—*A. F. Martin, D.L.S., 1903.*

Range 17.

Township 34.—The only portion in this township fit for any agricultural purposes, is the north half of section 36. As to the remainder of this fractional township, the soil is alkaline and swampy. Big Quill Lake is a pretty body of water; the margin of it is generally gravelly and stony.—*A. Bourgeault, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 17.

Township 37.—Frequent fires have destroyed most of the large timber. At places, fallen timber is piled up to a height of from six to fifteen feet. A thick growth of second growth poplar has taken the place of the former large timber. There is still a large quantity of poplar from four to six inches in diameter to be found. This timber is without any commercial value, but will be useful for intending settlers, both for building and fuel. The land is covered with a dense growth of willows. The soil consists of a rich black loam with a subsoil of clay, and the land would rate first-class if it were not for the numerous pothole sloughs which are scattered throughout the township. There is no sign of minerals. Excellent water may be found on digging anywhere. Hay is very scarce.—*A. F. Martin, D.L.S., 1903.*

Township 38.—This township is situated about 125 miles from Duck Lake station on the Canadian Pacific Railway, and about 12 miles from the new railroad now being constructed; the trail by which it was reached is a very good one. The soil is black loam from six to eighteen inches deep, with gray clay as subsoil; the ground is level and entirely covered with timber or high thick willows; about half of the township is covered by large marshes. The timber is from three to seven inches in diameter; there is a great quantity of dry and good timber; half of it is from eight to fifteen inches in diameter. There are no hay marshes. There is no stone nor sign of minerals. There is no water power. Climate is good; no summer frost is noted. Game is plentiful—deer, antelope, fox, wolf, muskrats, badgers and snipe of all kinds.—*C. E. Lemoine, D.L.S., 1903.*

Range 18.

Township 34.—The western and northwestern parts of this township contain good fair land that would be adapted for cultivation. The eastern part adjoining Big Quill lake is very flat and low and is largely impregnated with alkali, which renders this part unsuitable for cultivation. The water in the lake is also quite alkaline. The lake is very shallow for a good distance from the shore. The township is largely prairie, except the northwesterly part, which has a few small bluffs of poplar, but it is not of sufficient size to be of any value. There are no hay marshes in any part of the township though there is fair grass in the western and northwestern portions. There are not many ponds in this township and the few there are are chiefly alkaline as is also the lake. There are no streams in any part nor water power. Fuel is very scarce, only in the few small poplar bluffs. There is no appearance of coal or lignite anywhere. No stone or minerals of any kind were to be seen. Game is scarce, only a few ducks on the lake and no deer or antelope were observed.—*James Warren, D.L.S., 1903.*

Township 39.—This township is situated about 100 miles from Duck lake station. The best way to reach it is by the road from Duck lake passing through Batoche and 'One Arrow' Indian reserve, then by the Prince Albert and Troy road as far as section 5, township 39, range 24, where I opened a good trail through townships 37, 38, 39, ranges 20, 19 and 18. The soil is black loam from 10 to 18 inches in depth with yellow clay as subsoil and is first class for farming. It is almost all rolling prairie with a few small ridges in the northeast part of it. About half of it is covered by small bluffs of poplar and willows, more especially on the east part of it, the rest is open prairie. The poplar is from 3 to 5 inches in diameter, and is situated on the eastern part of the township. There is but one hay marsh and it is 6 miles long and from 20 chains to a mile wide, running north and south and it contains about 10 or 15 thousand tons of good hay. It is situated in sections 4, 5, 8, 9, 16, 17, 20, 21, 28, 29, 32 and 33. The water is plentiful, good and permanent. There is no water power. The climate is good with no summer frosts. Fuel is plentiful and can be had from all the townships adjoining. There are no stone quarries and no sign of minerals. Game

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 18.

is plentiful; deer, antelope, fox, wolf, badgers, cranes and snipe of all kinds being found.—*C. E. Lemoine, D.L.S., 1903.*

Township 40.—This township is situated about 100 miles from Duck lake, Canadian Pacific Railway station. The best road to reach it is the road from Duck lake passing through Batoche to the Indian reserve 'One Arrow,' and then by the Prince Albert and Troy road as far as section 5, township 39, range 24, where I opened a good trail through townships 37, 38 and 39, ranges 20, 19 and 18. The alluvial soil is from 6 to 18 inches of black loam, but unfit for farming, as it is all covered by windfalls and high willows, except sections 3, 2 and 1. The west part is rolling, the centre contains a large lake, marshes and muskegs; the timber is dry except a few small bluffs of poplar, which are surrounded by marshes and which the fire could not reach. The timber is poplar and a few cottonwood, from 5 to 8 inches in diameter situated on section 31, the rest of the timber is small poplar from 2 to 3 inches in diameter. There are no hay meadows. The water is plentiful, good and permanent. There is no water power. The climate is good and no summer frost was noted. Fuel is plentiful and can be had from all the surrounding townships. There are no stone quarries or minerals. Game is plentiful; deer, antelope, fox, wolf, duck, crane and snipe of all kinds are common.—*C. E. Lemoine, D.L.S., 1903.*

Township 41.—I went to this township by the Canadian Pacific Railway to Saskatoon on the Prince Albert branch. I completed my outfit at the latter place and went easterly across the Saskatchewan and along a trail meeting the third meridian at the boundary between townships 37 and 38. From this point I continued easterly, more or less along the same trail, making surveys as I proceeded, to township 38 in range 24, at Mount Carmel. From Mount Carmel we continued easterly along a well used trail to a point northerly from Deadmoose lake. We then left the main trail and went northeasterly to the southern end of Lake Lenore and continued around the eastern side of that lake to the south boundary of township 41, in range 20. We commenced surveys again at the latter township. We passed up through the centre of range 20 across township 20, and then easterly across range 19 and part of 18 to the middle of the herein described township. The route was bad and much labour had to be expended to make a possible road. A better route into this section of country is to be found from the north (Flett's Springs or Melfort). The soil is black loam with a subsoil of clay. Some of the township might be used for farming, other parts for ranching. Some portions of it are prairie in patches, generally it is covered with scrub and poplar timber. The scrubby parts cover the greater area. The timber is composed of poplar and balm of Gilead. Some of this is of good size up to 15 inches in diameter, and is in patches all over the township. There is not sufficient to reserve for lumbering purposes. The marshes and flatter parts yield grass which can be made into hay. Pea vine are seen amongst the scrub generally where not too wet. The water is suitable for general use. A considerable area is covered with lakes; I suppose these to be permanent. There are no streams to note. In wet seasons the lower and flatter lands would be covered with water. Flooding would not occur except from excessive precipitation. There are no water-powers. I saw no special indications of summer frosts. Poplar wood for fuel can be had everywhere. No coal or lignite was found. No stone quarries exist. No economic minerals were seen. Ducks are numerous. Bears are common. The township is probably the best for settlement of any I have surveyed up to date this season.—*G. B. Abrey, D.L.S., 1903.*

Township 42.—I reached this township by way of Saskatoon on the Prince Albert branch of the Canadian Pacific Railway, where I procured horses and wagons, and after crossing the Saskatchewan went easterly along a trail to the third meridian intersecting it at the boundary between townships 37 and 38. I continued easterly off and on the trail subdividing townships as I went, having my last camp at Mount Carmel in range 24. From Mount Carmel I went easterly again along the same trail

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 18.

to a point north of Deadmoose lake; I then left the main trail and went to the southern end of Lake Lenore, meeting a trail again. I followed this last trail to the south boundary of township 41, range 20. I commenced subdividing again here, and cleared, brushed, and bridged roads into this township. This making of passable roads over which to move our outfit required much labour and for a very indifferent road. A much better way to get into this section of country is from the north, say from Flett's Springs or Melfort. The township is generally flat and wet; some ridges are found in the northern portion. The southern portion is very wet and marshy. The surface soil is black loam of good depth with clay subsoil, and the country is better suited for ranching than farming. The northern portion has prairie patches here and there with scrub windfall and larger timber. The southern part is generally covered with willow scrub and other small growths. No very large timber is found, only poplar, balm of Gilead and scrub are found. In dry seasons probably large quantities of hay might be made in the southern parts. Plenty of good water was found during the survey and probably it is permanent. Barrier river crosses the township. It is fordable, having a stony bottom in places. At other places it is marshy and difficult to cross. The stream at one fordable place may be about 20 feet wide and 1 foot deep with a good current. The township (the flatter portions) would flood with wet seasons and heavy rains. Streams are not sufficient for water-powers. The climate has no features to note; we observed no indications regarding summer frosts. Poplar for fuel may be obtained easily. No coal or lignite was seen. There are no stone quarries and no economic minerals were seen. Ducks in some of the wet places were seen, with prairie chickens in the drier parts. Three lakes were traversed.—*G. B. Abrey, D.L.S., 1903.*

Range 19.

Township 34.—This township taken as a whole may be reckoned a first class township, though in the northern part there are a good many ponds or sloughs. A part of the marsh at the northeast end of Jansen lake extends into this township in which there are some hay lands. The greater part of the soil is clay loam and would be suitable for grain and for roots of all kinds. There are a great many bluffs of small poplar, none of which is of any commercial value, only fit for small buildings. There are a few hay marshes in the north and northwestern parts of the township. There are a great many ponds of water, all of which we found to be good and fresh with no alkali. There are many of these would give a permanent supply. There are no streams of any kind and consequently no water-power. The climate is fairly good and not more liable to summer frosts than the surrounding country. The only fuel to be obtained is in the small bluffs of poplar in the north, but the supply is limited. There are no indications of coal or lignite. There are no stone quarries nor are there any indications of minerals of any kind. Game is scarce; only a few ducks on the ponds. No deer or antelope to be seen. There are parts of this township would be well adapted to grazing, as there is fairly good pasturage in parts. Taken as a whole, if well cultivated would make a good township for settling on.—*James Warren, D.L.S., 1903.*

Township 35.—The soil throughout consists of a rich black loam, with a subsoil generally clay. The land is covered with bluffs of second-growth poplar, willow and scrub, intersected with small openings. A creek, carrying very good water runs on the line between sections 26 and 27 and southeasterly through section 12. The two western tiers of sections are rather broken and bushy, but the land rates as first-class. Some building logs are found on sections 30 and 31, but the rest of the timber is only fit for fuel and fencing. On the whole this township is reckoned as one of the most advantageous for settlers. It is well adapted for farming or ranching. A great quantity of the very finest quality of hay can be gathered. Water in the wells and in

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 19.

the sloughs is good. Part of sections 2 and 3 is covered with a large slough. There is no timber of any kind.—*A. F. Martin, D.L.S., 1903.*

Township 40.—This township is situated about 100 miles from Duck lake Canadian Pacific Railway station. The best road to reach it is the road from Duck lake passing through Batoche to the Indian reserve 'One Arrow,' and then by the Prince Albert and Troy road as far as section 5, township 39, range 24, where I opened a good trail through townships 37, 38 and 39, ranges 20, 19 and 18. The alluvial soil is 6 to 15 inches of black loam, it is all covered by windfalls and green poplar. The timber is poplar from 3 to 7 inches in diameter. There are no hay marshes. Water is plentiful, good and permanent. There is no water-power. Climate is good, no summer frost was noted. There was no sign of minerals or rock in place. Game is plentiful; deer, antelope, fox, wolf, duck, crane and snipe of all kinds are found.—*C. E. Lemoine, D.L.S., 1903.*

Township 41.—We reached this township by Canadian Pacific Railway through Winnipeg and Regina to Saskatoon. We then left the railway and proceeded by horses and wagons across the Saskatchewan easterly to the third meridian over a road well defined and in fair condition. This road intersected the third meridian at the boundary between townships 37 and 38. I continued along this road easterly subdividing townships as I went, making my last camp at Mount Carmel. From there I continued easterly passing a short distance north of Deadmoose lake. Near this point I left the main road and went northeasterly, passing the southern end of Lake Lenore, and continued around the eastern side of the lake to the south boundary of township 41, in range 20. I commenced subdivision again here and had to make roads to move supplies over by clearing the way, brushing and bridging the wet places and so on. The country is difficult to get through. This section is more easily reached from Flett's Springs or Melfort. The soil is black loam of good depth generally underlaid by clay. The ridges and hills are stony and gravelly in places, on account of its being so broken by sloughs and wet places it is suitable in dry seasons for ranching purposes. Very little prairie is found, though a few open spaces were passed through. Much scrub has grown up and a good deal of timber of fair size is scattered over the whole township in patches. The timber is poplar and balm of Gilead, large enough for buildings, but not of sufficient size for lumbering. The scrub is composed of willow poplar and balm of Gilead. Hay could be cut in all of the marshes in dry seasons, but the country is too wet this season to obtain much hay from them. The grasses in the wet places are the usual marsh varieties. On ground a little higher and amongst the scrub pea vines often occur. The water generally may be used for domestic purposes. Except during very dry seasons I would expect it to be permanent in the lakes and larger sloughs. There are no streams of importance; the land is only liable to be flooded from excessive rainfall. There are no water powers to be developed. The climate is similar to that of other portions in this latitude and locality. I noticed no indications of prevalence of summer frosts. Poplar wood for fuel may be obtained everywhere. No coal or lignite was seen. No stone quarries or economic minerals were discovered. Ducks abound in the lakes and marshes, and bears are plentiful.—*G. B. Abrey, D.L.S., 1903.*

Township 42.—I went to this township by way of the Canadian Pacific Railway to Saskatoon on the Prince Albert branch of that railway, where I procured horses and wagons. I crossed easterly over the south branch of the Saskatchewan and took an eastward trail to the third meridian, intersecting it at the boundary between townships 37 and 38. I made surveys of townships for some 30 miles from this meridian easterly, following closely along the trail, with my last camp at Mount Carmel in range 24. From this camp I continued easterly along the trail to north of Deadmoose lake, where I left the main trail and went northeasterly to the southern end of Lake Lenore to another trail. I followed this trail northeasterly around the lake to the

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 19.

south boundary of township 41 in range 20, where I commenced subdividing again. In moving my outfit further I had to make roads almost continuously by clearing the way, bridging and brushing the creeks and marshes at much expenditure of time. I passed northerly through township 41, easterly across range 18, and into near the centre of this township. A much better way into these townships is from the north, from Flett's Springs or Melfort, on the line of the Canadian Northern Railway. This township is rough, and broken by many lakes and marshes, with some stony hills and ridges. In the lower and flatter parts there is a good depth of soil, but at present it is not adapted for general farming. It might in places be used for ranching. There is no prairie. Some large poplar and balm of Gilead have been cut and removed from the northwestern part to be sawn into lumber. There is a large amount of large timber of the same sorts remaining scattered over the township, but not of sufficient importance to reserve for timber; windfall is general, and scrub always covering the surface. I do not believe that much hay could be made. Water is abundant and permanent, and not alkaline. Many lakes are found, with a good many small creeks running through muskegs and lakes. There are no water-powers. The climate has no special features to note. Poplar fuel may be obtained everywhere. There are no stone quarries, and no economic minerals were seen. No coal or lignite was found. Ducks abound in the lakes, while bears are numerous, and were troublesome and annoying during the survey.—*G. B. Abrey, D.L.S., 1903.*

Range 20.

Township 29.—This township is situated 54 miles north of Craven, Canadian Pacific Railway station. The best way to reach it is by the Troy and Prince Albert road, which is a very good one as far as the 'Poor Man' Indian reserve. From there a very good trail passes through this township. The soil is black loam from 5 to 14 inches, with gray clay for subsoil. The first two tiers of sections from 1 to 12 are broken by two large ravines from 30 to 50 feet deep, in the bottom of which runs a small stream of soft water, which I believe to be permanent. The rest of the township is bare prairie with no timber. There is but one hay marsh, which is on sections 20, 29 and 32. It contains about 1,000 tons of good hay. There is no water-power. The climate is good; no summer frosts were noted. The only fuel obtainable is in the Touchwood hills. There is no sign of coal or lignite, no stone and no sign of minerals. Game is plentiful; deer, antelope, fox, wolf, badgers, geese, ducks, cranes and snipe of all kinds are found.—*C. E. Lemoine, D.L.S., 1903.*

Township 30.—This township is situated 60 miles north of Craven junction. The best road to reach it is the Qu'Appelle and Prince Albert road, which is a very good one as far as the 'Poor Man' Indian reserve; from there a very good trail passes through township 29, range 30. The soil is black loam from 3 to 10 inches deep and gray, yellow and white clay subsoils. The township is a bare prairie. There is no timber whatever. It is well supplied with water, which though not very good is fit to drink. There is a large lake about 15 miles in circumference and a few small coulees. There are four large hay marshes situated as follows: Section 34, 200 tons; sections 36 and 25, 500 tons; sections 15, 16, 21 and 22, 800 tons; sections 20 and 17, 100 tons, all of good quality. There is no water-power in the township. The climate is good; no summer frosts were experienced. The only fuel obtainable is in the Touchwood hills. There is no sign of coal or lignite, and no stone or sign of minerals. Game is plentiful; deer, foxes, wolf, badgers, antelope, geese, duck, cranes and snipe of all kinds are common.—*C. E. Lemoine, D.L.S., 1903.*

Township 31.—This township is situated about 90 miles from Qu'Appelle station by way of the Qu'Appelle and Prince Albert road, which is the shortest and best way to reach it. The soil is black loam from 5 to 12 inches deep, and gray clay as subsoil.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 20.

The township is bare prairie, and there is no timber whatever. The greater part of the township is hay land and too wet for farming. Fresh water is plentiful, and found on every section in the deep hay marshes. There is no water-power. The climate is good, no summer frosts being noted. The only fuel to be had is from Touchwood hills. There is no sign of coal or lignite, and no stone or sign of minerals. Game is plentiful; deer, antelope, foxes, wolves, badgers, geese, ducks, cranes and snipe of all kinds are found.—*C. E. Lemoine, D.L.S., 1903.*

Township 32.—This township is situated about half way between the town of Prince Albert and Qu'Appelle station, Canadian Pacific Railway. The best road to reach it is the Qu'Appelle and Prince Albert trail, which is very good in this dry season, but would not be so good in a wet season. This township is about half good land and half bad. The north part is very good for farming, but the south part is situated in the salt prairie, and is only good for stock raising. The soil is four to ten inches of black loam, with white clay for subsoil. There are some bluffs of willows in the northwest corner of sections 30, 31, 32 and 29, but nothing fit for fuel. The only good water to be found is in the few small marshes and in the large sloughs in the centre, but in dry weather this water would only be good for cattle. There is no water power. The climate is good; no summer frost was experienced. There is no sign of coal or lignite and no stone. The game is plentiful; deer, antelope, badgers, ducks, cranes, snipe of all kinds and geese are common.—*C. E. Lemoine, D.L.S., 1903.*

Township 33.—The soil is black loam four to ten inches deep, with subsoil of white clay. It is good for farming. It is about half prairie with willows and a few bluffs of poplar. It is very well supplied with fresh water in the large willow marshes, and the lake on section 31 and 32. There is no water-power in the township. The climate is good, no summer frost was noted. The only fuel available is willows and poplar. There is no stone or minerals of any kind. The game is plentiful; deer, antelope, badgers, ducks, cranes, snipe of all kinds and geese are common.—*C. E. Lemoine, D.L.S., 1903.*

Township 34.—The northwesterly and southeastern portions of this township are covered with small poplar bluffs, with numerous small ponds. There is a good deal of grass and pasturage in these portions of the township would make good grazing for cattle, as shelter is abundant. The soil is first-class, though covered with bluffs in many places, and if cultivated would be well adapted for grain-growing. The bluffs in the township are of small timber, none being of any size and only fit for small buildings. There are no hay marshes in the township, only at the northeast of Jansen Lake, which is chiefly a large marsh covered with hay, which can be cut when the water is low in the lake. There is a long, narrow lake in the township, lying in a northeasterly direction, and from a quarter to half a mile wide. The water is quite alkaline and not fit for use for domestic purposes. There are no streams or creeks of any kind, as the township is quite flat. The only fuel is in the small bluffs on the township. No coal or lignite was seen nor any signs of them. No minerals of any kind. There is no game, only a few prairie chickens and ducks on the lake. We saw one or two deer, but they do not appear to be numerous. Taking this township as a whole it would be termed first-class, and well adapted for grazing.—*James Warren, D.L.S., 1903.*

Township 35.—The soil throughout consists of a rich black loam with a subsoil of clay. The surface, however, is so much broken by high ridges that the land can only rate as second-class. Between the ridges the land is covered with a dense growth of scrub and willows. There are numerous bluffs of second growth poplar, especially in the eastern half of the township. This poplar can be used for fuel or for fence rails. There is no big timber. A good quantity of hay can be got, but the land will have to be cleared of scrub and willows before it could be gathered. Water throughout is very alkaline, and particularly so in the wells. In the surface sloughs, however, the water is sweet. It is to be questioned if any water could be found in these sloughs in a dry

4-5 EDWARD VII.. A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 20.

season. There is no mineral of any kind. A running creek, which I take to be a branch of Wolverine creek, runs nearly south through sections 31, 30, 19, 18, 7 and 6; it carries very alkaline water. —*A. F. Martin, D.L.S., 1903.*

Township 36.—The soil consists of a rich black loam with a subsoil of clay. Owing, however, to the country being broken by ridges and numerous pocket sloughs, the land only rates as second-class. A good deal of hay is found about the sloughs. Timber consists of poplar, mostly saplings in bluffs. Between the ridges the land is covered with a thick growth of willows and scrub. A creek running almost south from section 33, across the township carries about two feet of water, but the water is very alkaline. Water is sweet in all the pocket sloughs but good water is hard to get by digging. There is no mineral of any kind. The creek above mentioned is thought to be a branch of Wolverine creek.—*A. F. Martin, D.L.S., 1903.*

Township 41.—I went to this survey from Toronto, via North Bay by the Canadian Pacific Railway to Saskatoon on the Prince Albert branch of that railway. At Saskatoon I crossed the Saskatchewan and travelled easterly along a trail intersecting the second meridian near the boundary line between townships 37 and 38, from thence I continued easterly along the said trail subdividing several prairie townships as I proceeded, finishing these surveys from a camp on Mount Carmel in township 38, range 24; the same trail passes near Mount Carmel continuing easterly along a trail passing north of and not far from Deadmoose lake. From here we left the main trail and went northeasterly, passing the south end of Lake Lenore and continued in the same direction to the southerly boundary of the herein described township. Most of the way from Saskatoon was over a fairly good road. From the southerly boundary of this township, roads had to be made by clearing, brushing the muskegs and marshes and bridging the streams. The township is wet, largely muskeg and marsh and only suitable for ranching in dry seasons. The surface is covered with poplar and willow scrub, and in the drier portions poplar timber large enough for firewood and the walls of log shanties is found. These places are distributed all over where ground is dry enough. Hay marshes are abundant. The water is generally fresh and suitable for domestic use and would be found everywhere unless in very dry seasons. The streams are not large nor flowing swiftly and are not likely to flood the land to any great extent; the land is flooded chiefly because of its flatness. Water-powers do not exist. The climate is similar to other parts of the country in the same latitude. Fuel of poplar is plentiful everywhere. No coal or lignite was seen and no stone quarries; no economic minerals were found. Bears and ducks are plentiful.—*G. B. Abrey, D.L.S., 1903.*

Township 42.—We reached this district by the Canadian Pacific Railway to Regina and by the Prince Albert branch of that railway to Saskatoon. From the latter place I took wagons, crossed the Saskatchewan and proceeded easterly along a trail intersecting the second meridian at the boundary between townships 37 and 38. I continued thence along a trail easterly, subdividing townships as I went, completing the survey of prairie townships at a camp on Mount Carmel in township 38, range 24. From Mount Carmel I took a trail passing near the camp and continued more or less easterly, passing north of and near Deadmoose lake. I then left the main trail and went northeasterly passing near the southern end of Lake Lenore. Continuing around the eastern side I reached the southern boundary of township 41, range 20. Over most of this distance the roads were fairly good. Through township 41, range 20 roads had to be constructed by clearing the way, bridging the creeks and brushing the marshes and muskegs. Near the south of this township the land became drier, and an old trail was found running northerly through the centre of the township. A better way to get to this section is from the north from Flett's Springs. The surface soil is black loam of good depth, with generally a clay subsoil. There is a very large proportion of muskeg of no use, under existing conditions of climate. Stony ridges in-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 20.

tervene between the muskegs. Ranching might be carried on, though the muskegs yield no grass and are impassable. Except on the muskegs the whole township is covered with timber and scrub. The timber and scrub is general, patches of each occurring, but little large timber was found. The timber is composed of poplar and balm of Gilead. The scrub is of the same kinds, and willows. These latter cover also the more solid portions of muskegs. Not many hay marshes were found. Water is found in the muskegs, lakes and marshes and would be permanent in the lakes and muskegs. It is suitable for domestic uses. There are no streams and the land is not liable to more flooding than we found. There are no water-powers. The climate is as usual in this country and latitude. I saw no special indications of summer frosts. Fuel is poplar and is plentiful everywhere. Coal or lignite was not seen. No stone quarries or minerals of economic value were seen. Bears are numerous. Ducks are found on the waters.—*G. B. Abrey, D.L.S., 1903.*

Township 43.—I made this survey with others lying southerly of it and proceeded to the ground from Toronto by way of Saskatoon by railway, and thence by trail across the country. Very few would probably come by that route. An easy way to get in is by trail from Flett's Springs, on the Melfort and Prince Albert trail. The part of the township adjoining and other townships to the north being already settled, and roads made, gives access from that direction. Some portions of this township will make desirable farming lands. The whole is suitable for ranching. The surface is rolling and surface soil is black loam of good depth underlaid by clay. There is some prairie land, some with good sized timber growing, and more covered with scrub. The prairie is in small patches on the higher ground in the southeastern part; the timber and scrub are generally distributed. Some of the poplar is large enough for settlers' log houses. All timber is either poplar or balm of Gilead. The marsh lands occur all over and yield grasses from which hay can be made, but little pea vine was seen. Water is all fresh; a small creek crosses the township. Two lakes were surveyed. The creek and lakes would appear to be permanent. The other wet places might dry up in dry seasons. I would not expect much flooding except from excessive precipitation. There are no water-powers nor indications of summer frosts. Poplar wood for fuel occurs all over, but no coal or lignite was seen. There are no stone quarries nor were any economic minerals found. Bears are common and ducks are numerous. A few chickens were seen on the prairie ridges, but the country is too low and flat for game requiring high ground.—*G. B. Abrey, D.L.S., 1903.*

Range 21.

Township 25.—This township is very hilly and uneven; some of the hills are very high, and covered with small bluffs of poplar of small size, there seldom being a tree 6 inches in diameter. There is no timber of any commercial value. Some might be used for small buildings. The soil is very hard and is unfit for agricultural purposes, except in very few cases. Last mountain is chiefly included in this township—only a small part in township 24—and scarcely any in township 26 to the north. There are no hay marshes or meadows, but among the bluffs fair pasturage could be got, and could be used to good advantage for ranching purposes, as good shelter can be got in most cases. There are a great many ponds, which are generally deep, and the water is good and comparatively free from alkali. None of the land would at any time be liable to flooding. There are no streams nor water-power on any part of the township. The climate would be comparatively free from frosts as it is so dry. There are no stone quarries, but in places there are a great many loose stones that could be used for building purposes. No minerals were seen. Fuel can be had without much trouble, as there is a great deal of fallen timber in places. Game is scarce; we did not see any

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 21.

deer, only a few chickens, but there were a great many ducks on the lakes and ponds. This township could be used to good advantage as a large ranch, as there is fair pasturage and good water; the trouble would be in there not being any hay. The cattle would have to be wintered elsewhere. There is a good settlement on township 24, where the settlers are generally prosperous. They are chiefly Germans, who came out direct from Europe, and are very thrifty and industrious. The crops this year are very good, and a good sample of grain. There is a post office, 'Strassburg,' in township 24, range 21, about section 29, which is a great convenience for the settlers.—*James Warren, D.L.S., 1903.*

Township 26.—The soil in this township is of a very fair quality, the greater part of which would be suitable for growing grain and roots. The surface is open and generally level prairie. Last mountain just touches the southerly part of the township, and not the northern part as shown on the published maps. There is no timber of any kind in the township. There are a few very small hay marshes; not enough to be of much value. There are a few ponds of good fresh water, some of which are deep, and would hold water all season. On sections 1 and 12 there is a long narrow slough or pond which is deep and will always have water in it. There are no streams running in the township and no water-power. The climatic indications are good, and there would not be summer frosts. There is no fuel on the township, but a fair supply can be got on township 25, where there is a limited supply. There are no stones on any part of the township. Game is scarce, there being only a few ducks on the ponds or marshes. The township as a whole may be rated as a first-class one, good for settlement. There is a survey line for a railway on township 27, just to the north, which if built would be a good outlet.—*James Warren, D.L.S., 1903.*

Township 29.—This township is situated about 90 miles from Qu'Appelle station on the Canadian Pacific Railway. The road from the station to Prince Albert is the best route to reach it, as it is only 8 miles west of this road, which is a very good one, except where it goes through the salt plains for a distance of about 7 miles. This part can be avoided by following from the 'Poor Man' reserve an old cart trail that goes straight west, and which is very good. The soil is good for farming, being from 5 to 12 inches of black loam with gray clay as subsoil. It is gently rolling, with a few hills. There is no good hay land, and no good water except the rainfall which gathered in about a dozen small marshes. In a dry season there would be no good water. There is no water power. The climate is good; no summer frosts. There is no timber whatever, and the nearest place where fuel can be had is at Touchwood. We saw no sign of coal or lignite, no stone and no minerals. Game is plentiful; deer, antelope, badgers, fox, wolf, duck, prairie chicken and snipe of all kinds are common.—*C. E. Lemoine, D.L.S., 1903.*

Township 30.—This township is situated about 90 miles from Qu'Appelle station, Canadian Pacific Railway, by the Prince Albert and Qu'Appelle road, which is the best route to reach it. It is only 3 miles west of this road, which is a very good one, except where it goes through the salt plains for a distance of about 7 miles. The soil is good, being composed of black loam from 5 to 12 inches deep, with yellow clay as subsoil; in a very few places the subsoil is sand and gravel. It is a broken country, but there are a few level sections in the centre. Sections 1, 2, 11, 12 and the south half of 14 and 13 are useless, being low swampy land with a few sandy and rocky hills. A saline creek passes through this portion. The rest of the township though broken is good for general farming and stock-raising. It is open prairie, with no large marshes. There is no good water, except the rain water which gathers in about a dozen small marshes. In a dry season there would be no good water. Climate is good; no summer frosts were noted. There is no timber whatever, and the nearest place where fuel can be had is at Touchwood. There is no sign of coal, lignite, stone or minerals. Game is plentiful; deer, antelope, badgers, fox, wolf, duck, prairie chicken and snipe of all kinds are common.—*C. E. Lemoine, D.L.S., 1903.*

SESSIONAL PAPER o. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 21.

Township 31.—This township is situated about 90 miles from Qu'Appelle station by the Prince Albert and Qu'Appelle road, which is the best route to reach it. It is only three miles west of this road, which is a very good one, except where it goes through the salt plains for a distance of about seven miles. The soil is poor, more especially in the centre where there are some large marshes and saline ponds. The only sections good for farming are the following: 31, 32, 33, 19, 30, 29, 3, 2, 1, 10, 11, 12, 13, 14, the rest may be used for stock-raising. The township is a bare prairie with about two square miles of good hay land. There is no good water except the rain water which gathers in about a dozen small marshes. In dry seasons there would be no good water at all. Climate is good with no summer frosts. There is no timber whatever, and the nearest place where fuel can be obtained is Touchwood. There is no sign of coal or lignite and no stone or minerals. Game is plentiful; deer, antelope, badgers, foxes, wolves, ducks, prairie chicken and snipe of all kinds are found.—*C. E. Lemoine, D.L.S., 1903.*

Township 32.—This township is situated about half way between the town of Prince Albert and Qu'Appelle station on the Canadian Pacific Railway. The best way to reach it is by the road to Prince Albert which is very good in this dry season, but not so good in a wet season. The soil is 5 to 8 inches of black loam with white clay as subsoil; but in some places the subsoil is sand and gravel. It is good for farming and stock-raising. The greater part of it is prairie with some bluffs of poplar from 2 to 5 inches in diameter and some willows are found in the centre. The belt covered by this wood is about two miles wide running from east to west. Water is very scarce. There are no large marshes, but a few small ponds formed by the rain water. There are two large swamps but the water in them is alkaline. The climate is good, no summer frost being noted. The only fuel is the poplar and willows which grow in the centre of the township. There is no stone nor minerals. The game is plentiful; deer, antelope, badgers, ducks, cranes, snipe of all kinds and geese are found.—*C. E. Lemoine, D.L.S., 1903.*

Township 33.—This township is situated about half way between the town of Prince Albert and Qu'Appelle station on the Canadian Pacific Railway. The best road to reach it is the Qu'Appelle and Prince Albert trail, which is very good in this dry season, but not so good in a wet season. The alluvial soil is 7 to 12 inches of black loam with white clay as subsoil. The most part is prairie with small bluffs of young poplar and willows. The strip of ground covered by these bluffs is about two miles wide and runs at an angle of 45 degrees from the southwest to the northeast corner; there are also a few bluffs of poplar, willows and shrubs on the north part of sections 31, 32, 33, 34 and 35. This township is well supplied with soft water by a large coulee that passes through the centre, and some large hay marshes 2 to 3 feet deep, where the water is always cool and fresh. In the south part there are also four or five ponds from 4 to 5½ feet deep with good water. There is no water-power. The climate is good, no summer frosts were observed. The only fuel is the small poplar and willows. There is no sign of coal or lignite, no stone and no indication of minerals. The game is plentiful and consists of deer, antelope, badgers, ducks, cranes, snipe of all kinds and geese.—*C. E. Lemoine, D.L.S., 1903.*

Township 34.—This township can be reached by the Prince Albert trail following the telegraph line. The soil is black loam with sandy clay and clay subsoil, suitable for mixed farming and grazing. The surface is covered with a thick growth of poplar and willows with prairie spots and is rolling. The only timber consists of poplar from 2 to 6 inches in diameter and willows occurring in bluffs. There are a great number of small sloughs where hay could be cut in a dry season. There is no permanent supply of good water; the numerous small ponds and lakes are strongly alkaline. There is plenty of fresh water in the sloughs but in a dry season there would be none. There are no water-powers. Last summer was cold and wet, but there were no summer frosts.

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 21.

The only fuel is poplar and willows. No coal nor lignite, stone quarries or minerals were found. Prairie chickens, ducks and rabbits are common.—*J. A. Côté, D.L.S., 1903.*

Township 35.—This township can be reached by the Prince Albert trail, following the telegraph line. The soil is black loam, with sandy and clay subsoil, suitable for mixed farming. The south half is good for farming and the north half for grazing. The surface is covered with a thick growth of poplar and willows, with prairie spots, and is rolling. The only timber consists of poplar 2 to 6 inches in diameter and willows occurring in bluffs. There are a great number of sloughs where hay could be cut in dry seasons. There is no permanent supply of good water in the township. The numerous small ponds are alkaline. There is plenty of fresh water in the sloughs, but in a dry season there would be no fresh water. There are no streams in this township and no water-power. The season was cold and wet, but there were no summer frosts. The only fuel is poplar and willow. No coal nor lignite, stone quarries or minerals were discovered. Prairie chickens, ducks and rabbits are found.—*J. A. Côté, D.L.S., 1903.*

Township 36.—This township can be reached by the Prince Albert trail, following the telegraph line. The soil is black loam, with sandy and clay subsoil, suitable for mixed farming and grazing. The surface is covered with a thick growth of poplar and willows, with prairie spots, and is rolling. The only timber consists of poplar 2 to 8 inches in diameter, and willows occurring in bluffs. There are a great number of sloughs where hay could be cut in dry seasons. There is no permanent supply of good water in the township; the numerous small ponds are alkaline. There is plenty of fresh water in the sloughs, but in dry seasons there would be no fresh water. There are no streams in this township and no water-powers. Last summer was cold and wet, but no summer frosts were experienced. The only fuel is poplar and willow. No coal or lignite, stone quarries or minerals were observed. Prairie chickens, ducks, and rabbits are common.—*J. A. Côté, D.L.S., 1903.*

Township 41.—The means of getting into this township is by rail from Flett's Springs. It is in good condition and is used by settlers in townships to the north and to the south. The soil is black loam from 2 to 18 inches in depth, with a clay loam or other loam subsoil. In different parts the clay comes to the surface. The soil is very well fitted for agriculture, the most of it being first or second-class. However, much of the land is low and in the rainy seasons becomes wet, and not being much above the level of Lake Lenore, considerable portions would be useless for farming. The surface is mostly timbered and scrubby. In sections 29, 30 and 28, there are a few small tracts of prairie land, the extent being about 200 acres. Along the east shore of Lake Lenore there is considerable prairie land. This occurs in sections 2, 11, 23, 34 and 35. The timber (which is poplar) and brush exist in the proportion of about 2 to 1. The timber is scattered although there are some compact areas in the northwestern part. The brush consists principally of heavy willows, hazel, cherry and poplar. Fallen timber is found throughout more or less. Hay marshes and meadows extend at intervals all along Lake Lenore. In sections 22, 23 and 14 there is a tract of marsh on which there is a luxuriant growth of hay. On this marsh several stacks of hay were found which settlers from townships in the vicinity had put up. The extent of this marsh is about 350 acres. Hay of good quality is also found along the lake on sections 2, 11, 27, 34, 35, 26, 33, 28, 29 and 30. The sections bordering on Lake Lenore have the best water supply. The water in this lake is fresh and suitable for all uses. The water in the remaining lakes and ponds is fresh, but some of the sections have very little. A creek of from 4 to 10 feet in width and 2½ feet deep flows through sections 31 and 30, emptying into Lake Lenore. The current is about 2 miles per hour, and the water is clear and cool the year round. This stream affords some of the best water in the district. Another creek somewhat smaller, apparently flows out

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 21.

of the south end of Lake Norona, in section 25, through sections 26 and 36, and empties into Lake Lenore. When survey was made this creek was frozen to the bottom. Much of the water will dry up in a dry season. Much of the land in the vicinity of Lake Lenore, both on the east and west sides, is liable to flood in the wet seasons. There is no available water-power. Fuel exists all through in the form of poplar and dry windfall. There are no stone quarries nor minerals of economic value. No large game was seen in this township, but jumping and black-tailed deer and an occasional black bear are known to exist. Of the other fur-bearing animals, the red fox, muskrat and rabbits are common, also the coyote. Mink, weasel, lynx and badger are not so common, but a few are found. Wild ducks of many varieties and ruffed grouse are found in large numbers. Fish abound in Lake Lenore. For description of climate see that given for township 42, range 21, west of the second meridian.—*George Ross, D.L.S., 1903.*

Township 42.—The means of getting into the township is by a trail in the eastern part, leading from Flett's Springs. The trail is in good condition and is in use the year round. At present it is the only means of entering the township. The soil is mixed throughout. Black loam and black sand two to eighteen inches deep with a subsoil of clay or some loam form the soil in many parts. In some sections, clay or light loam forms the soil. The soil is very well adapted for general farming, in most parts being rated as first or second class. The surface is timbered and scrubby with the exception of a stretch of prairie in sections 25, 26, 35 and 36. Some of this land is overgrown with low scrub which could be easily removed in one season. Through these above mentioned sections, there is about six hundred acres of prairie land, the greater part being in the west halves of sections 25 and 36. In sections 2 and 3 along Lake Lenore there is a small area of prairie between the marsh and the brush. The remainder of the township setting aside lakes, ponds and marshes, is timbered and scrubby in about equal proportions. The brush and scrub occur chiefly through the central part of the township and consist of cherry, willow, hazel and young poplar. Much fallen timber is scattered throughout. The timber consists of aspen, and balsam poplar. It averages from three to ten inches in diameter. In the west part of the township, it grows quite thickly, but in the eastern part is more scattered. There are many hay marshes and marsh ponds through the western half. All, or nearly all are deep and in a wet season cannot be utilized. However, in a dry season, when the water would be low, much hay could be taken out. Marshes occur in the western halves of sections 4, 6, 8, 9, 16, 17, 18, 20, 21, 22, 29, 30, 31, 32 and 33. The quality of the hay is good and that which could be used in a dry season would cover from two to fifteen acres on an average in each marsh. In the eastern part of the township at the north of Lake Lenore, there is a hay marsh in parts of sections 23, 24, 25 and 26. As in the other marshes, the most of this hay could only be gotten out in a dry season. In the south part of the eastern half, along Lake Lenore, more hay grows. In sections 2 and 3 a strip of hay marsh is found on either side of the lake. The area of these two strips is about one hundred acres. The water supply exists in the form of ponds, lakes and creeks. The water throughout is fresh and of very good quality. There are several small creeks, averaging from two to ten feet in width. These flow through sections 30, 19, 32, 34, 35, 26, 27, 22, 15, 10, 11 and 6. The depth averages a foot, and the current about a mile and a half per hour. The volume of water is not great. The water supply in a dry season would be limited to the large lakes. There are no available water powers in the township. The climate is similar to that in the surrounding prairie townships in this district, where a large amount of grain, such as wheat and oats is grown; and vegetables such as potatoes, beans and onions are cultivated with great success. Last summer there were some summer frosts, but no resulting injury to vegetation was noticed and tender vegetables such as beans, grown in the neighbouring townships suffered no hurt. Last

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 21.

summer the rainfall was excessive; consequently there was more surface moisture than usual, so when the land is cleared up and drained, no injury need be feared from summer frosts. Ice formed on the smaller ponds on November 8, and remained during the winter. By November 15 the ice on the ponds and lakes was quite solid. There are no stone quarries nor minerals of economic value in the township. Fuel exists in large quantities throughout, in the form of poplar wood and dry poplar windfall. The larger game is scarce, there being a few jumping and black tail deer and an occasional black bear. Foxes, muskrats, skunks and rabbits exist in considerable numbers. Mink, weasel, badger and coyote are found but are scarce. The feathered tribe consists of many varieties of wild duck. These birds inhabit the district in large numbers. Ruffed grouse are numerous. Fish are found in the lakes and must exist in large numbers for the creeks were all full of minnows.—*George Ross, D.L.S., 1903.*

Township 43.—This township was surveyed after completing that of others farther south. The route for reaching this is from Flett's Springs from the Prince Albert and Melfort trail. Trails are made up through the settlements close to the northern boundary of this township. The township can accommodate a few farmers, and more by clearing the land. There are some high hills. It would make ranching land, and is suited for mixed farming. The surface soil is black loam over a clay subsoil. Some of the ridges are stony and the soil thinner and lighter. There is very little prairie, most of the surface is covered with timber and scrub. Some windfall occurs. The timber is mixed generally with the scrub, and is composed of poplar and balm of Gilead. Sufficient of suitable size may be had for settlers' log houses. Marshes and muskegs are frequent, though not so numerous as found in townships to the southwest. The low lands yield grasses that may be made into hay. The hay marshes are not of great extent. Numerous small creeks are met with. One lake was surveyed. All water is fresh. The water I would expect to be permanent. There are no water-powers. The land is not liable to be much flooded except from precipitation locally. There are no special indications of summer frosts. Poplar wood for fuel may be had everywhere. No coal or lignite was found. There are no stone quarries, nor were economic minerals seen. Bears are common. Ducks are found in the wet places; some partridges are found in the woods.—*G. B. Abrey, D.L.S., 1903.*

Range 22.

Township 25.—The soil in this township is of good quality for the greater part, and is well adapted for grain growing, also for roots. The surface is all open prairie, and part of the northeast is gently rolling; the remainder is generally level. There is no timber of any kind in the township, it being all open prairie. The east boundary is hilly. In the northeast corner of the township there is a large level marsh or pond, which from the surrounding banks appears to have been a large lake at one time, but now has only about 6 inches of water, and is covered with reeds and grass. There are no hay meadows on the township; only a few ponds have long grass. There is no water in the township, only a few ponds which are fresh. There are no streams of any kind, nor any water-power. The climate appears to be good, and judging from the surroundings would not be liable to summer frosts. There is no fuel in the township, but a fair supply can be had on township 25, range 21, adjoining. There is no appearance of coal or lignite in any part of the township. There are no minerals to be seen in the township. Game is scarce. We saw only ducks on the marsh in the northeast part of section 36. This township is fairly well adapted for settling, as the soil is generally of good quality, and is favourably situated to some of the surrounding settlements.—*James Warren, D.L.S., 1903.*

Township 26.—This township is of fair quality; the greater part would be suitable for grain-growing or for roots, as the soil is generally good. In section 1 there is a

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 22.

large marsh or what was formerly the bed of a large lake, but now has only about 6 inches of water and is covered with grass and weeds. The old shores are well defined by a steep bank about 6 feet high. The surface is generally level; part of the north is somewhat rolling, but could not be called hilly. There is no timber of any kind on the township. Hay marshes are scarce and only small. There are a few ponds of water, which are generally fresh and free from alkali. The supply of water is generally limited. There are no streams, and consequently no water-power of any kind. The climatic indications are good, and it would be comparatively free from summer frosts. There is no fuel, but it could be got from township 25, range 21, on which there is a fair supply. There is no stone or minerals of any kind in the township, nor is there any appearance of coal. Game is scarce; only a few ducks were seen on the ponds or marshes. Taking the township as a whole, the land is of a fair quality, and would be available for settlement.—*James Warren, D.L.S., 1903.*

Township 29.—This township is all prairie; there is no wood at all, except small clumps of willow and a very few scattered clumps of fire-killed poplar toward the north. The surface in the southerly two-thirds of the township is flat or gently rolling, with flat ridges and extensive flats. There are a few sloughs, without hay. The two tiers of sections at the north end have a gently rolling surface, and the land is generally dry and most of it first class. The south two-thirds on the other hand is only third-class. It has extensive flats of soft clay (alkaline). It is seldom of any use for farming purposes. There are a few small scattered boulders in places. The township as a whole must be described as a poor one. The soil varies from a heavy clay on the flats to loam or sandy loam on the higher places. Access to this township is at present from Davidson on the Regina and Prince Albert Railway, by a trail which passes around the north end of Last Mountain lake, and continues eastward to the Touchwood Hills country. There are no settlers of any kind in the township. Colt lake is a sheet of water on section 19, the water being somewhat brackish. It has mostly high banks.—*John McAree, D.T.S., 1903.*

Township 30.—This township is all prairie; except for three or four small and unimportant bluffs of willow and poplar, and in the northerly part there is no timber at all. The surface is gently rolling or else level and the soil clay and clay loam to sandy loam. A good deal of the land is first class. There are a few small sloughs but no hay sloughs of any importance. The water in this is generally fairly good and free from alkali. There are a few small boulders scattered through the northern part of the township, which has also a few small hills and knolls. There are no settlers or other inhabitants. The route from the township is westward to the southerly part of township 30, range 22, and thence southwesterly to the trail going to Davidson on the Regina and Prince Albert Railway. We saw a few prairie chicken and antelope and in the larger sloughs great numbers of ducks, jack-rabbits, sandhill cranes, wild geese, pelican, woodcock, snipe, plover, meadow larks, &c. The grass on the uplands is short and crisp.—*John McAree, D.T.S., 1903.*

Township 31.—This township is entirely prairie; there is no timber except two or three small clumps of young poplar and willow about the centre of the township. The surface is level or else very gently rolling. Sloughs occur here and there; some of them on the west side of the township may be called hay sloughs. Besides the sloughs there are other flat places on nearly every section which in very wet years might come under the term sloughs, but which in years of ordinary rainfall would be good arable land. The soil is mostly clay loam, loam and sandy loam around the bluffs; at the centre of the township is a sandy tract. The soil is generally of good depth—8 to 15 inches—with clay, clay and gravel or sandy subsoil. Small boulders occur throughout the township, but very thinly scattered as a rule. A tract about 20 chains in width running southwesterly from section 34 across the township, contains a series of stony, gravelly hills, up to about 30 feet in height. The ridges are not continuous, but are

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 22.

interrupted and the tops of them are mostly stony and gravelly. There is no running stream in the township; Grassy creek passes outside the southeast corner, but in the sloughs the water is all fairly good. No doubt good water could be found by digging a few feet.—*John McAree, D.T.S., 1903.*

Township 32.—The northwest corner of the township consisting of sections 5, 6, 7, 8, 18 is clay loam. The eastern part of the township consisting of the east tier of sections and sections 2, 3, 10, 11, 14, 15, 23, 26 is clay loam with a few stones. The remainder of the township is mostly black sandy loam. The surface is mostly gently rolling prairie. The north third of the township is flat. Small clumps of willow occur along the line of the east boundary of sections 20, 29, 32, also in sections 34 and 35. The flat land produces hay. The northern part of the township appears to be wet judging from a recent storm. A few boulders occur scattered through the soil in sections 1, 3, 5 and 9.—*John McAree, D.T.S., 1903.*

Township 33.—This township is open prairie excepting along the northerly two tiers of sections crossing the range where there are numerous bluffs of poplar and willow. This poplar will be useful as fuel, but scarcely any is of sufficient size for building purposes. Across the middle of the township a belt of rather low-lying land occurs, which would be well adapted for hay; there are a number of these hay areas. The southerly part of the township is inclined to be sandy in places; as a whole the soil may be described as sandy to sandy loam. Some of the knolls are gravelly. Wolverine creek crosses the township and there are some sloughs and hay sloughs in its vicinity. There is some fine hay land along the north shore of Owl lake. The water in the sloughs is fairly good. At the time of our survey Wolverine creek could be crossed almost anywhere by a team. There is some fine land along the east side of the township. Some of the sections among the poplar bluffs would be good sites for small ranches, hay and fuel being fairly plentiful and the soil suitable. As a whole, the township would be suitable for mixed farming.—*John McAree, D.T.S., 1903.*

Township 34.—This township can be reached by the trail from Prince Albert, which crosses it from north to southeast. The soil is black loam with sandy clay, clay, sand and gravel subsoil, suitable for mixed farming and grazing. The surface of the east half is covered with a thick growth of poplar and willows, with prairie spots; the west half is rolling prairie. The only timber consists of poplar 2 to 6 inches in diameter. There are a great number of sloughs where hay could be cut in dry seasons. There is no permanent supply of good water, the numerous small ponds are alkaline; there is plenty of fresh water in the sloughs, but in a dry season there would be none. There is no water-power. The season was cold and wet, but there were no summer frosts. The only fuel is poplar and willow. No coal nor lignite, stone quarries or minerals were observed. Prairie chickens, ducks and rabbits are found.—*J. A. Côté, D.L.S., 1903.*

Township 35.—This township can be reached by the trail from Prince Albert, which crosses the township from north to southeast. The soil is black loam with sand and gravel, sandy clay and clay subsoil, suitable for mixed farming and grazing. The surface is covered with a thick growth of poplar and willows with prairie spots, and except in the northwest is rolling. The only timber consists of poplar 2 to 6 inches in diameter. There are a great number of sloughs where hay could be cut in dry seasons. There is no permanent supply of good water in the township; the numerous small ponds are alkaline. There is plenty of fresh water in the sloughs but in dry seasons there would be none. There are no streams in the township and no water-power. The season was cold and wet, but no summer frosts occurred. The only fuel is poplar and willow. No coal nor lignite, stone quarries or minerals were found. Prairie chickens, ducks and rabbits are common.—*J. A. Côté, D.L.S., 1903.*

Township 36.—This township can be reached by the Prince Albert trail, which crosses the southwest corner. The soil is black loam, with clay, sand and gravel sub-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 22.

soil, suitable for mixed farming and grazing. The surface is covered with a thick growth of poplar and willows with prairie spots and is rolling. The only timber consists of poplar 2 inches to 5 inches in diameter and willow occurring in bluffs. There are a great number of sloughs where hay could be cut in dry seasons. There is a permanent supply of good water in sections 30, 31, 32, 33 and 34. There is plenty of fresh water in sloughs, but in dry seasons there would be none. There are no streams in this township and no water-power. The season was cold and wet, but no summer frosts occurred. The only fuel is poplar and willow. No coal or lignite, stone quarries or minerals were discovered in the township. Prairie chickens, ducks and rabbits are found.—*J. A. Côté, D.L.S., 1903.*

Township 37.—This is a first-class township. When I made the survey in September last there were some 30 settlers. All of these were Germans from the United States, with the exception of one family who were Poles. These settlers had arrived during last summer and were all well supplied with stock and farm implements. All those who had arrived sufficiently early in the season had some crop, also potatoes, barley, oats and flax. I never looked upon a finer field of oats than I did there, in the third week of September. It was almost ripe and had been sown on May 21. The other crops were equally good. The land is practically level, with some small sloughs. There is sufficient wood in scattered bluffs to furnish firewood for many years to come, provided they are preserved from forest fires. It is all small poplar and willow. The soil is a rich clay. There is one stream of good water emptying into Humboldt lake. This is a fine large sheet of water, but it is very bitter. It is a great resort for ducks and geese. The larger part of the lake is in township 36, range 22. All the men had a considerable amount of breaking done ready for crop the coming season. Nearly all the sloughs contained good water, and the settlers all had excellent wells of moderate depth. The flourishing condition of the crops bore ample testimony to the favourable climate. The people were most enthusiastic over the country. Their nearest station is Rosthern, to which there is a good wagon trail. The Canadian Northern Railway is surveyed across the township, lying for the most part in the second tier of sections from the south boundary, but as the survey may not be permanent, I took no note of it. Prairie chickens, ducks, muskrats and badgers constitute the only game. There are no quarries nor minerals.—*James Dickson, D.L.S., 1903.*

Township 41.—The best route for reaching this township is as follows:—Start from Duck lake and go easterly to Batoche, thence along the Batoche branch of the Qu'Appelle and Prince Albert trail to the main trail from Qu'Appelle to Prince Albert, thence northeasterly and south of Wakaw lake by an unsurveyed trail to the point in township 43, range 25, where this trail meets an old trail from Prince Albert to Basin lake, thence southeasterly passing south of Shannon lake, south of Basin lake and along the west side of Middle lake, entering the township in section 6. This route is in good condition at present. The soil is chiefly black loam from 2 inches to 18 inches in depth, with either a sandy loam, loam or clay subsoil. Much of it in the south part of the township is first-class and would make good farming land when cleared of brush and timber. In some places clay and different loams form the surface soil. The surface is mostly timbered and scrubby. In the south part are small tracts of prairie land from 2 to 15 acres in area. These tracts occur in sections 5, 6, 7 and 8. In sections 32 and 33 there are also small tracts of prairie. In section 25 (the eastern half) there is a tract of prairie with an area of about 100 acres. There is also a strip of prairie land along the north shore of Lake Lenore in sections 26 and 27. The remaining part of the township where not broken by ponds or hay marsh is covered with brush and timber. About 20 per cent of the township is covered with poplar timber from 2 to 18 inches in diameter. Timber is found on sections 3, 4, 5, 8, 9, 10, 11, 13, 14, 15, 16, 17, 21, 22, 23, 25, 26, 33, 34, 35, 36 and on 18 on Gooseberry island. There is much fallen timber all through which is partly burned. Hay of very good quality may be

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 22.

had in this township. In the south part in sections 5 and 6 there are about 500 acres of hay land. In the summer and fall this land is fairly dry and the hay may be easily gotten at. Another large tract of hay and grass marsh and meadow extends from the western extension of Lake Lenore, through sections 28, 29, 20 and 19, running into Middle Lake in section 18. The extent of this tract is about equal to one section. This marsh is dry enough in the summer for hay to be cut. Hay of an inferior quality may be had along the east shore of Middle lake and along the north and south shores of Lake Lenore. The water supply is abundant, there being many large ponds through the township. The water in Middle lake is bitter and unfit for household use. That in Lake Lenore is fresh and well fit for use. In the south there are two creeks flowing into Middle lake. One flowing through section 6, is about 3 feet wide and 1 foot deep, the current being about 1 mile per hour. Another creek from 3 to 5 feet wide and averaging $1\frac{1}{2}$ feet in depth flows through sections 5, 6 and 7 into Middle lake. These two creeks contain good water. The other creeks in the township are described in the field notes. All of the creeks will be dry during a dry season. The land is not liable to floods. There are no available water-powers. There are no stone quarries nor minerals of economic value. Wood is the only available fuel and may be had all through in the form of live and dry poplar. The larger game consists of jumping and black-tailed deer. The smaller game is numerous, consisting of duck, grouse, partridge, rabbits, hare and cotton-tails. Muskrats abound in the ponds. Other fur-bearing animals, fox, mink, weasel and coyotes are found in small numbers. Fish are found in Middle and Lenore lakes. For description of climate see that given for township 42, range 21, west of the second meridian.—*George Ross, D.L.S., 1903.*

Township 42.—There is at present no regular trail leading into this township, although an old trail partly obliterated enters the township in the north part in section 31. Where this trail crossed the boundary line could not be ascertained. It leads from Flett's Springs or Kinistino. The soil is mostly clay, clay loam or stony light loams, and much is unfitted for farming. A great drawback to this township for farming is that it is broken and hilly, and some parts are low and swampy. However, there is some first-class land, as shown by the field notes. The surface of the township is mostly scrubby. About eight per cent is covered with poplar timber of both the aspen and balsam varieties. Poplar timber grows on sections 1, 2, 3, 4, 8, 9, 10, 12, 13, 15, 16, 17, 24, 25, 33, 34 and 36 in greater or less quantities. The timber, which is rather scattered, averages six inches in diameter. The township was burnt over some years ago and has since become overgrown with much young poplar from one to three inches in diameter. Poplar, willow, cherry and hazel brush, with much fallen timber, cover the entire surface. There is very little hay land. Small marshes occur in sections 22, 28, 31, 32 and 36. The hay in these can only be gotten out in a dry season. Along a creek flowing out of Little Moose lake through sections 8, 7 and 6 there is a strip of land covered with hay and short grass. The strip is from two to twenty chains in width. In the southeast quarter of section 5 there is a large grass marsh containing grass of very fair quality. There is much water throughout in the form of ponds or lakes. All of it is fresh. The creeks, which are small, contain good water. Their width varies from three to five feet, and the depth averages about a foot. One creek in the north has its source in a shallow marshy lake in sections 29 and 32. It flows through parts of sections 29, 30 and 19. After crossing the west boundary of section 19 it evidently flows into Basin lake. A creek having its source in Little Moose lake in section 8 flows through sections 8, 7, 5 and 6 and crosses the south boundary. This creek widens out into ponds in many places. The current is about two miles per hour, and the volume of water is quite large in rainy seasons. Two other small creeks flowing into Little Moose lake flow through sections 15 and 16, and enter the lake in the northeast quarter of section 9. There would be little or no water in these creeks in a

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 22.

dry season. Fuel in the form of poplar wood and dry poplar windfall exists in large quantities. The windfall extends more or less all through. There are no minerals of economic value, nor are there any stone quarries. The large game, which is not very plentiful, consists of jumping and black-tailed deer. The small game consists of rabbits, hare, duck, partridge, a few mink, muskrats, fox and coyotes. An occasional lynx is found. We did not discover any fish in the lakes, although some may exist. For description of climate, see that given for township 42, range 21, west of the second meridian.—*George Ross, D.L.S., 1903.*

Township 43.—After completing certain other surveys, I proceeded to this township by way of Flett's Springs, a settlement on the Prince Albert and Melfort road. A trail branches from the main road, going southerly, passing through the centre of the township, and is reasonably well cut out and in fair condition. This township has a fair depth of black loam surface soil, except where broken by hills, on the slopes of which the soil has been carried away by natural causes. A deep wide ravine extends through the township from north to south, in which a small creek flows. The ravine is about a mile in width and 250 feet in depth as measured with a barometer. Portions of the slopes of the banks of the main ravine are very rugged and broken by intersecting ravines. The bottom of the ravine is rough and broken by hills and muskegs. On the west side of the ravine extending to the western boundary the township is wet and broken by marshes and muskegs. Some portions might be utilized in dry seasons for ranching, and of course it might all be drained into the valleys and become farming land. No prairie is seen. Scrub and timber with windfalls cover the whole dry portion. The timber is poplar and balm of Gilead. Hay may be made in the marshes when not too wet; the quantity would not be great. Water is plentiful in the streams and marshes. It would be permanent in the creeks; it is not alkaline. The streams are all small, and not sufficient for water-power. The land would not be flooded to any great extent. There were no special indications of summer frosts. Poplar wood for fuel can be had all over the township. No coal or lignite was seen. There are no stone quarries showing, and no economic minerals were seen. Bears are common. A few ducks were seen; some partridges were found on the banks of the ravine.—*G. B. Abrey, D.L.S., 1903.*

Range 23.

Township 29.—This township is entirely prairie, excepting a couple of small bluffs of willow and small poplar and an occasional willow bush. The township is quite destitute of timber. The surface in general is a flat prairie with a soft and dark clay soil. Towards the northwest and northeast quarters of the township the land is gently rolling. At the northwest corner the soil is sandy. On the ridges or more elevated tracts, the soil is clay to clay loam, whilst on the flat, it is clay and sometimes a soft pasty clay or what is called alkali. Most of the land would therefore be rated as third-class, and the rest second-class. Wolverine creek crosses the township and is joined by Saline creek from the northeast. There are no hay sloughs worth mentioning. From an agricultural point of view the township is a very good one. Access to the township at present is by a trail from Davidson on the Regina and Prince Albert Railway. This trail goes around the northwest of Last Mountain lake, and passes near the southwest corner of the township and then leads away to the Sandwood hill country. There are no settlers in the township.—*John McAree, D.T.S., 1903.*

Township 30.—This township is level or only very gently rolling throughout; it is all open prairie and quite destitute of timber of any kind, except an occasional willow grassy creek. A stream 10 links wide, 2 feet deep, with a current of one mile an hour winds through the southeast quarter of the township. Boulder lake, a fine sheet of good water comes in on the west side. There is also a long marshy lake in section

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 22.

20, &c. Wolverine creek drains Boulder lake and is a fine stream. In section 31 and for a mile east from the lake along the north boundary, the boulders are very numerous. The soil on the higher parts varies from black loam to black sandy loam, or even to a more sandy soil, but on the flatter places it is loam or clay loam. There are very few hay sloughs but there are a few sloughs where the grass grows to be about 9 inches high, but it is seen to consist almost wholly of leaves. On the dry land the grass is quite short. The water in all this region is fairly good. This township would be good for summer ranching on account of the abundant water, and a large percentage of the area will be found to be suitable for general crops. There are no settlers in the township. Access to the township at present is by way of trail to Davidson on Regina and Prince Albert Railway.—*John McAree, D.T.S., 1903.*

Township 31.—This is a prairie township, there being no timber at all except a few small clumps of young poplar. The surface is level or gently rolling with flat places. These flats are not so wet as to be called sloughs, yet the grass growing in them is different from that on the higher ground and usually of a yellow tint. These flats would probably be too wet for general crop in a wet season. There are a few small sloughs but very few hay sloughs—a serious drawback to ranching in this township. Some of the sloughs appear to be virtually springs. The soil is mostly a black clay loam containing a considerable percentage of sand forming a light soil. On the higher ground this soil prevails but on the lower lands the soil contains more clay. The soil in the southwest quarter of the township is a dark or black clay, a clay loam, but in this quarter the boulders lie thickly on the ground. This stony tract takes in sections 6, 7 and 18 and the west halves of 5, 18 and 17. The remainder of the township is comparatively free from stones except on a few knolls in the southeast part. Wolverine creek crossing the westerly part of the township is a fine stream about 20 to 30 inches deep and 10 feet wide. There are some sloughs along its course. The township would be suitable for mixed farming rather than for wheat growing or ranching. Until another railway is built it will be tributary to Davidson on the Canadian Pacific Railway. There are no settlers in the township.—*John McAree, D.T.S., 1903.*

Township 32.—This township is all open gently rolling or level prairie. There is a bluff of a few acres of small poplar, willow, &c., at the southwest corner, otherwise the township is destitute of timber. There are a few ridges with gravel and some stones, but outside these the land is nearly all first class. The soil is sandy loam, loam and clay loam, with clay subsoil. There are some good hay sloughs, also on the uplands. The township is well watered by the Wolverine creek which runs diagonally across the township. There is some good hay land along this stream. Altogether the township is a desirable one for ranching or for growing grain.—*John McAree, D.T.S., 1903.*

Township 33.—This township is open prairie, with the exception of a tract on the four sections around the northeast corner of section 11, where there are a few poplar bluffs with trees up to 6 inches; there are also a few small bluffs around the northeast corner of section 10. There are clumps of willow scrub scattered over the eastern and the southern portions of the township. The land is level or gently rolling, and there are very few sloughs. The soil is generally free from boulders, but on some of the low narrow short ridges there are beds of fine gravel, sometimes in the subsoil and sometimes at the surface. The soil is generally sandy and sandy loam, with a little clay loam. In the area of poplar and willow bluffs in the southeast quarter of the township the soil is decidedly sandy. This township will be adapted to mixed farming, except a few sandy areas which will probably remain unoccupied for some time after the more valuable sections have been taken up. The scarcity of hay land will forbid ranching to any great extent.—*John McAree, D.T.S., 1903.*

Township 34.—This township can be reached by the trail from Prince Albert, following the telegraph line. The soil is black loam, with sandy clay, clay, sand and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 23.

gravel subsoil, suitable for mixed farming and grazing. The surface of the south half is rolling prairie and the north half low level prairie. There is no timber. There are a great number of sloughs where hay could be cut in dry seasons. There is a permanent supply of good water in the creek running southwest, crossing sections 5, 6, 8, 16, 17, 21, 28, 33 and 34. There is plenty of fresh water in the sloughs, but in a dry season there would be none there. There is no water-power in the township. The past summer was cold and wet, but no summer frosts occurred. No wood for fuel, coal nor lignite, stone quarries or minerals were found. Prairie chickens and duck were seen.—*J. A. Côté, D.L.S., 1903.*

Township 35.—This township can be reached by the Prince Albert trail, following the telegraph line. The soil is black loam, with clay, sand and gravel subsoil, suitable for mixed farming and grazing. The surface in the northwest half is covered with heavy poplar and willows, with prairie spots; the southeastern part is rolling to level prairie. The only timber consists of poplar, 2 to 6 inches in diameter. There are a great number of sloughs in which hay could be cut in dry seasons. There is no permanent supply of good water; the numerous small ponds being alkaline. There is plenty of fresh water in the sloughs, but in dry seasons there would be none. There are no streams and no water-power. We had a cold and wet season, but no summer frosts. The only fuel is poplar and willows. No coal nor lignite, stone quarries or minerals were found. Prairie chickens and ducks are numerous.—*J. A. Côté, D.L.S., 1903.*

Township 36.—This township can be reached by the Prince Albert trail, which crosses the northwest corner. The soil is black loam, with clay, sand and gravel subsoil, suitable for mixed farming and grazing. The surface is covered with a thick growth of poplar and willows, and prairie spots, and is rolling to level. The only timber consists of poplar 2 to 6 inches in diameter. There are a great number of sloughs where hay can be cut in dry seasons. There is no permanent supply of good water; the numerous small ponds and lakes are alkaline. There is plenty of fresh water in the sloughs, but in dry seasons there would be none. There are no streams in the township and no water-power. The summer was cold and wet, but there were no summer frosts. The only fuel is poplar and willows. No coal nor lignite, stone quarries or minerals were observed. Prairie chickens, duck and rabbits are found.—*J. A. Côté, D.L.S., 1903.*

Township 37.—This may be styled a first-class township. There are very few quarter sections which will not make good farms. The soil is either black clay or clay loam. There is sufficient timber to last the settlers for fuel for a number of years to come. The timber is poplar and willow, of which I found none exceeding 8 inches in diameter, the largest mostly dead. It is all in scattered bluffs, mostly south of the north chord. The balance of the land is all open prairie, nearly level. There are a number of small sloughs and two small lakes, sufficiently large to require to be traversed. I found no hay meadows, but large quantities of hay may be cut on the high dry land. There are a number of settlers in the northern part, from all of whom I took declarations. The Touchwood Hills and the Prince Albert cart trail enter the township on section 3, and leave it on section 30. There is a telegraph line a short distance west of and practically parallel to the cart trail. I found also the survey of the Canadian Northern Railway across it, but as I was not certain if this would be the permanent location I made no note of it. There is no running water, but the settlers had all a sufficient supply of good water, at a depth of from 10 to 12 feet. The nearest railway stations are Saskatoon and Rosthern, there being a good trail to each. Only one settler had been there early enough last spring to put in any crop. He had an excellent crop of potatoes grown on the newly turned sod. The climate is good, there being no indications of summer frosts. There were no stone quarries nor minerals. The only game I saw was prairie chickens and muskrats. Both are to be had in abundance.—*James Dickson, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 23.

Township 38.—The land in this township is almost entirely first-class. There is a large and very wet alkaline slough east, and another drier and smaller one west of Gertrude lake. The land is knolly and rough along a large part of the west boundary. With these exceptions, it is mainly first-class land, a fine clay loam almost level. There is no timber south of the south chord. North of that, and also around the eastern side of Gertrude lake, there are bluffs of small poplar and balsam of Gilead sufficient to afford a supply of wood for years. Deadmoose and Gertrude lakes are beautiful sheets of water, clear as crystal, but bitter and utterly unfit for use. Neither of them has any outlet. A fine creek of good water enters Deadmoose lake in section 34. Another small one enters from the east on section 36. I found twenty-four settlers in the township. I took declarations from twenty of them. The remaining four said they did not intend settling permanently. All came from the United States last summer. They are Germans and Austrians, and seem to be a very desirable class of people. They are well supplied with stock and implements, and are enthusiastic about the country. Those who had arrived sufficiently early had put in a small crop, which turned out first-class. There are no hay meadows, but any quantity of good hay is being cut on the high lands. The water in the sloughs is good, and a number of the settlers have good wells at a moderate depth. The nearest railway station is Rosthern, from which there is a good wagon trail. The climate is good; to this the crops bore ample testimony. Ducks, geese, prairie chickens, muskrats and badgers are plentiful. There are no stone quarries nor minerals.—*James Dickson, D.L.S., 1903.*

Township 41.—The best route for reaching this township is as follows:—Start from Duck lake and go easterly to Batoche, thence along the Batoche branch of the Qu'Appelle and Prince Albert trail to the main trail from Qu'Appelle to Prince Albert, thence northeasterly and south of Wakaw lake by an unsurveyed trail to the point in township 43, range 25 where this trail meets an old trail from Prince Albert to Basin lake, thence southeasterly passing south of Shannon lake and South of Basin lake. The trail enters the township at the south of Basin lake in section 30. At present this route is in good condition. Black loam from 2 to 18 inches in depth forms the soil in nearly every part. The subsoil is usually a light loam or clay in some cases sandy and sometimes stony. The soil is very suitable for grain raising and farming in general. The surface is mostly covered with brush and timber there being very little open prairie. There are about 600 acres of open prairie through the township, situated in part of northwest quarter of section 34, parts of sections 33, 32, 31, 30 and 29, the west parts of sections 18 and 19, also in parts of sections 10, 11, 12, 1 and 5. The timber is poplar with some scattered birch in the south and is found mostly in clumps and scattered through the central and southern portions. The average diameter is about 6 inches. Timber is found on sections 5, 6, 7, 9, 10, 11, 12, 13, 14, 21, 26, 27, 34, and on Pelican island. There are scattered clumps and trees through other sections. All told there are about 2,200 acres of compact and scattered timber. The remaining part of the township where not broken by marshes, lakes or ponds is covered with poplar, willow, hazel or cherry brush and other scrub; and in section 36, there is fallen timber. There is not very much hay through the township, it being generally found in small marshes or along the edges of the lakes and ponds. However, there is a large hay marsh in section 1, the area of which is about 200 acres. Along Middle lake in sections 12, 13, 14 and 22 there is a strip of hay marsh varying from 2 to 20 chains in width. The area of this strip is about 300 acres. The remaining part of the hay is found in small marshes from 2 to 30 acres in area. These small marshes are found in sections 5, 6, 7, 8, in section 4, north of Lake Number 1, in sections 9, 10, 15, 16, 21, and 28 and along Middle lake in sections 27, 34 and 35. The quality is medium and the hay does not grow very high. In those sections where there are tracts of open prairie the grass is of very good quality for feeding purposes. There is an abundant supply of fresh water in the township in the many ponds and creeks.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 23.

The water in Middle and Basin lakes is unfit for domestic use owing to its bitter taste. This is evidently caused by the dead poplar in the water. The creeks are small and occasionally dry up. Two empty into Basin lake, one flowing through the northwest quarter of section 31. The width of this creek is about 2 feet and the depth about 1 foot. The current is slow. Another creek having its source in section 30, flows through sections 30, 31 and 32 close to the fifth meridional section line and empties into Basin lake. This stream averages 2 feet in width, is 2 feet deep and flows at the rate of about 2 miles per hour. The course is partly underground. The remainder of the streams run only in wet seasons, and average from 1 to 3 feet in width and are from 6 inches to 2 feet deep. The land is not liable to floods. For fuel, poplar timber is the most available. There are no coal nor lignite veins in the township. There are no stone quarries nor minerals of economic value. There is much small game throughout the township consisting of many varieties of wild duck, partridge, ruffed grouse, prairie chicken, rabbits, hare and cotton-tails. Although no large game was seen, jumping and black-tailed deer inhabit the district. Of fur-bearing animals the mink, fox and muskrats are found, the latter being very numerous. There are also a few coyotes, weasels and skunks. Basin lake contains some fish, there being large numbers of black suckers. It was learned from settlers in the vicinity that Middle lake also contains fish. For description of climate see that given for township 42, range 21, west of the second meridian.—*George Ross, D.L.S., 1903.*

Township 42.—This township can be reached most conveniently by a trail leading from Kinistino or Flett's Springs. This trail passes through township 43, range 22, entering the township in the eastern part. Just where this trail crosses the boundary line and its subsequent course, could not be ascertained on account of its not being much used and having thus become partly obliterated. With very little trouble a trail could be cut through. On account of the southern part of the township being broken by lakes, hills and marshes an entrance could not be easily made from the south. There are a few tracts of prairie land in the northwestern part, bordering on Basin lake. These tracts are from five to twenty-five acres in area. In all, the area is not more than one hundred acres. The remainder of the township not under water is covered with poplar timber or brush and windfall, in the proportion of about five to one. Considerable areas of timber are found on all sections north of Basin lake and on those to the east except 1, 2, 3, 10 and 11 where there is very little. The brush and scrub consist of willows, young poplar, hazel and cherry. The only hay of any value is that in the marsh bordering the north shore of Middle lake in sections 2 and 3. Fifty acres is approximately the area of the hay land. The soil in this township is generally first or second class, consisting of a surface layer of black sand, sandy loam or black loam ranging in depth from two inches to two feet. Subsoil is usually clay or a clay loam. In the hilly portions clay and sand come through to the surface in many places and are generally mixed with stone. In the northern part there is much good land. The southern portion although the soil is fair is much broken and hilly and only small scattered parts are fitted for agriculture. The water in all but Basin and Elkona lakes is fresh and of good quality. In the north there are two small lakes, one in sections 33 and 34 and the other in section 32. From the south end of each a small creek flows into Basin lake. Another small creek flows into Basin lake through section 31 from a muskeg on the north boundary. The streams average two feet in width and about a foot in depth. The current would probably average about two miles per hour. The water in Elkona and Basin lakes is bitter. This is evidently due to the large quantities of dead poplar timber in them. Good fuel may be had throughout in the form of dry windfall and live poplar. There are no stone quarries nor minerals of economic value. The game consists of wild duck, partridge and ruffed grouse; rabbits, hare, cotton-tails and some jumping and black-tailed deer. There are many fur-bearing animals. Muskrats are found in large numbers. Mink, red fox, badger, lynx,

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 23.

weasel and skunk are scarcer. There are fish in Basin lake. Black suckers are perhaps the most numerous. For description of climate, see that given for township 42, range 21, west of the second meridian.—*Geo. Ross, D.L.S., 1903.*

Township 43.—After completing other surveys I proceeded to the survey of this township from Flett's Springs on the Prince Albert and Melfort road; I went by trails amongst the settlers, keeping to the east and south of Waterhen lake and found a very fair road to about the centre of range 22, township 44. From this point a road had to be cut and cleared through heavy continuous poplar woods. The surface soil is a black loam of fair depth with a clay subsoil generally. The country if cleared of timber would be suitable for general farming, and until it is cleared it is not adapted for anything. The township is mostly covered with timber. It consists of poplar, balm of Gilead and birch with scrub. It is not large enough for lumbering purposes, but is very suitable for cordwood. Very little hay land exists. The water is all good. A few creeks of small size cross the township. A marshy lake occupies portions of sections 33 and 34; another lake covers parts of sections 24 and 25 and two beautiful narrow lakes with high banks extend into the township from the township south of it. This township would not be subject to floods. There are no water-powers. I saw no indications of summer frosts. Poplar wood for fuel is found all over the township. No lignite was discovered and no stone quarries are known to exist. No minerals of economic value were seen. Bears as usual are very common; from the tracks and trails, deer of several kinds must be numerous at some seasons of the year. Partridges were seen.—*G. B. Abrey, D.L.S., 1903.*

Township 44.—After completing the survey of other townships lying east of this one, I went to the survey of this by way of Flett's Springs on the Prince Albert and Melfort road, going in on the east and south sides of Waterhen lake. Much of the land already surveyed up to and adjoining this township being occupied by settlers who have made trails or roads to their places, gave easy access towards this township. From about the centre of range 22, I had to cut out and clear a road through continuous timber in making the survey. There are two portions of the township covered by prairie, one at the northwestern corner in the vicinity of Carrot river and the other at the southeastern side, being an expansion of a strip of prairie from range 22. This prairie is of very small extent. The rest of the township is continuous woods: if the timber was cleared off the township would be suitable for general farming. It is not adapted for any purpose with the timber standing. The soil is a black loam of fair depth, with a clay subsoil. The timber is composed of poplar and balm of Gilead, with some birch. Frequently the trees run up to 12 inches in diameter. The timber is not large enough for board logs, but makes excellent cordwood. This description is general for the township. Very little hay land is found. All water is good. No alkaline water was found. The water is probably permanent. Excepting the few lakes and streams not much water was found. Carrot river crosses the northwest corner of the township. A few other small streams are met with; two lakes were surveyed. The land is not liable to be flooded. There are no water-powers unless it might be by damming Carrot river. There is a strong current in this river, and at times the volume is considerable. The river flows between high banks. I saw no indications of summer frosts. Poplar wood for fuel is abundant everywhere. No lignite was seen and no stone quarries are known to exist. No economic minerals were found. Bears are numerous. From the many trails and tracks of deer seen, deer must be plentiful at certain seasons of the year.—*G. B. Abrey, D.L.S., 1903.*

Range 24.

Township 29.—The east half of the township is covered with several large alkaline sloughs. In the west half the soil is of good quality, and this part of the township is

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 24.

well adapted for farming, although the soil requires a good deal of moisture. Hay is very scarce. All the sloughs and ponds scattered throughout the township contain good water. Good water can also be got by digging a few feet from the surface. There is no timber nor any mineral of any kind.—*A. F. Martin, D.L.S., 1903.*

Township 30.—A large alkaline slough covers the greatest part of the east half of section 29 and also of the northwest quarter of section 22. The land is rolling and the soil consists of a very good clay loam. Section 36 is very stony. Good water is scarce and can only be found in the few sloughs scattered through the township. There are many hay sloughs which, however, were under water at the time of the survey. There is no timber nor any minerals of any kind. A large lake covers the greatest part of sections 36 and 25.—*A. F. Martin, D.L.S., 1903.*

Township 31.—I travelled from Dundurn station on the Canadian Pacific Railway (Prince Albert branch) over a rolling prairie country, without any trail, to this township, distance about sixty miles. The soil is a sandy loam, with clay and gravel subsoil, rated second and third-class, suitable for grazing or cultivation. The surface is a gently rolling prairie, and good fresh water is found in sloughs, around which hay may generally be found. No fuel, stone quarries, minerals or water-power. A lake about two miles long and from ten to fifteen chains wide is situated on sections 28, 29 and 32, lying in a northwesterly direction. Wild duck are plentiful, and antelope are occasionally seen.—*E. J. Rainboth, D.L.S., 1903.*

Township 32.—This township was reached from Dundurn station on the Canadian Pacific Railway (Prince Albert branch) over a rolling prairie country without any trail, distance about 60 miles. The soil is a sandy loam with clay subsoil, and is rated first and second-class, suitable for grazing or cultivation. The surface is a level or gently rolling prairie, with numerous sloughs containing good fresh water, around which is generally found a good growth of long grass or hay. No fuel, stone quarries, minerals or water-power. Wild duck are plentiful, and some few antelope.—*E. J. Rainboth, D.L.S., 1903.*

Township 33.—The township is situated about sixty miles across prairie from Dundurn station. The soil is principally clay loam with a clay subsoil. There are several gravelly and stony ridges, unfit for farming, but growing a fine quality of grass, which renders the land fit for ranching. The surface is high rolling prairie, with a few level pieces of ground. There are no hay meadows of any extent. The water in the permanent lakes is all strongly alkaline. As all the small ponds of fresh water dry up in summer, water would have to be obtained by sinking wells. The country is high, and probably subject to summer frosts. There is no fuel, no coal, no quarries, no minerals and no game.—*J. E. Woods, D.L.S., 1903.*

Township 34.—The township is situated about 60 miles east of Dundurn station, across the prairie. The soil is principally clay with large ridges of stony and gravelly ground, which would be more suited to ranching than to farming. The surface is mostly a high rolling prairie, with an occasional flat piece of ground. There are a few bunches of willows on sections 20, 21, 28 and 29. There are no hay meadows of any account. The water in all the permanent lakes is alkaline, and it is a question whether good water could be obtained from wells. The country is high, and probably subject to summer frosts. There is no fuel, no coal, no quarries, no minerals and no game.—*J. E. Woods, D.L.S., 1903.*

Township 35.—The surface of this township is undulating and hilly, abounding with fresh water ponds and hay marshes. Many of the hills are thickly strewn with boulders. The sections in the northeast portion of the township contain some poplar timber of small size, with willow and poplar brushwood. The surface soil is a dark sandy or clay loam from 6 to 10 inches in depth, while the subsoil is a heavy clay sometimes mixed with gravel. Some sections are adapted for cultivation, and the whole is suitable for pasture land. As to quality, the land might be classed

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 24.

as second grade. An old unused trail crosses the township in a northwesterly direction, going to Batoche, but there are no trails in use at present. There is no difficulty in travelling in any direction across the prairie, the country westward to Saskatoon being comparatively level, and the Prince Albert and Qu'Appelle trail passes within seven miles of the northeast corner of the township. There are no running streams nor permanent lakes, and no indications of economic minerals, but there are both limestone and granite boulders suitable for building. Elk and antelope were seen; ducks and prairie fowl were plentiful and foxes and muskrats very numerous. Vegetation was not affected by summer frosts after the fine weather began towards the end of May. The opening up of real spring weather was later than usual this year, although snow disappeared early in April. The hay supply would probably meet the demand of the country if applied to mixed farming. Building timber might have to be hauled 20 miles or upwards from the northeast, and wood for fuel would be brought from the same quarter, the timber in the township not being sufficient to supply the demand.—*Thos. Fawcett, D.T.S., 1903.*

Township 36.—In the westerly portion of this township the surface is very hilly and undulating, the crests rising on an average some 50 feet above the lower places. The easterly half is more or less level land. Some sections joining the east boundary contain a quantity of small poplar timber, the trees not exceeding 10 inches in diameter. There is also considerable willow and poplar brush. The soil is a black sandy or clayey loam about 8 inches deep with a clay subsoil. The vegetation indicates great fertility. There is some excellent hay in the marshes, and abundance of fresh water in the ponds and sloughs. While parts of the township would be suitable for cultivation it is more especially adapted for stock or for mixed farming. There is a small percentage of stony land on the hilly portions. The land throughout would average a good second-class. An unused trail traverses the township going to Batoche. There are no trails in use at present, but the township is accessible from all directions. The timber above mentioned would partially supply the demand, a full supply could be obtained by going some 20 miles northeast. There are no living streams of water nor permanent lakes. No indications of minerals of economic value are seen, and no outcrop of rock for building stone, but boulders which would answer the purpose are found on some sections. Game consisting of elk, antelope, red deer, foxes and wolves, also ducks and prairie chickens were seen in the township.—*Thos. Fawcett, D.T.S., 1903.*

Township 37.—I proceeded to the survey from Toronto by way of the Canadian Pacific Railway to Saskatoon. At Saskatoon, I procured horses and wagons and crossed Saskatchewan river and went easterly along a trail to the third meridian, intersecting the same near the northern boundary of township 37. I commenced the season's surveys at this point and in continuing the surveys followed along or near the trail to the camp from which the township was subdivided. The trail followed is quite sufficient for the requirements of early settlers. The surface soil of black loam averages about four inches in depth, covering a sandy subsoil. The tops of the hills are generally stony and strewn with boulders, with a gravelly subsoil and with a thinner depth of loam. But for the broken nature of the country, much of it might be classed as number one. It is too broken and rough for general farming, but is suitable for ranching cattle and horses. The township may be said to be all prairie for there is no timber and very little scrub. The margins of the many sloughs and marshes yield grass that may be made into hay. There are no running streams and the water, though abundant, is all in the hollows. We found it generally free from injurious alkali and used it generally. There are no water-powers to develop. We did not find that summer frosts were prevalent. Poplar wood for fuel may be obtained in some of the adjoining townships. No coal or lignite was seen. Limestones and other boulders are scattered over the hills and may be used for lime and buildings; no other economic minerals were seen and no fixed rock shows at the surface. Many ducks and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 24.

prairie chickens may be had; antelope and other deer were seen, while foxes and badgers are very numerous.—*G. B. Abrey, D.L.S., 1903.*

Township 38.—I proceeded to the survey from Toronto by the way of the Canadian Pacific Railway to Saskatoon, thence crossed Saskatchewan river, and went easterly along a road or trail to the third meridian, intersecting it near the southern boundary of township 38, still continuing easterly off and on along the trail subdividing the intervening ranges to range 24 where we camped on Mount Carmel and from it the subdivision was made. This trail was easily followed, was in fair condition and good enough for the requirements of early settlers. The soil is a black loam and similar to that generally found in this locality averaging about four inches in depth, below which the subsoil is sandy. There are many gravelly and stony hills and ridges. The country may be described as all hills and hollows and it is better adapted for ranching than for agriculture. About one-fourth of the surface is covered with poplar timber and scrub, the balance being prairie. Much of the poplar is suitable for building log houses and cattle sheds such as are common in the country. Fire wood is abundant for local uses. Ponds and small hay marshes are found everywhere between the hills. The water is all contained in the ponds and marshes and is generally good for drinking and domestic use. The ponds are usually deep with steep shores and would not fluctuate in area greatly by changes of the seasons. There are no streams in this township. No frosts occurred during the period of survey. No coal or lignite shows on the surface. Limestone boulders are scattered over the surface and may be used for burning into lime and with other boulders might be formed into buildings. No fixed rock was seen. Many ducks and prairie chickens are found. Antelope and other kinds of deer are seen and foxes and badgers are numerous.—*G. B. Abrey, D.L.S., 1903.*

Range 25.

Township 29.—The whole township is open prairie with a few small scattered ponds throughout. The soil consists of clay loam with subsoil of clay on the level prairie, and with subsoil of sand on the ridges. Hay is scarce. There is no timber of any kind. Water is good in all the ponds. There was no mineral noticed. This township is well adapted to farming, but the soil requires a good deal of moisture.—*A. F. Martin, D.L.S., 1903.*

Township 30.—The soil consists of clay loam with subsoil of clay in the low lands and with subsoil of sand on the ridges. The country throughout is rolling open prairie. Hay is very scarce. Good water is to be found in all the numerous small ponds scattered through the township. There is no timber to be seen. There are no minerals of any kind. This country is generally dry and is well adapted to farming, but the land requires a good deal of moisture.—*A. F. Martin, D.L.S., 1903.*

Township 31.—This township was reached across country without any trail over a rolling prairie from Dundurn station on the Canadian Pacific Railway (Prince Albert branch), distance about 55 miles. The soil is a sandy loam with clay subsoil, rated second and third-class, suitable for grazing or cultivation. The surface is a gently rolling prairie, with scattered clumps of small poplar and willows, fit for fuel or fencing. Good fresh water is found in small ponds or sloughs, around which a small quantity of hay may be found. No stone quarries, minerals or water-power. Wild duck, prairie chicken and deer plentiful.—*E. J. Rainboth, D.L.S., 1903.*

Township 32.—This township was reached by travelling across country without any trail over a rolling prairie from Dundurn station on the Canadian Pacific Railway (Prince Albert branch), distance about 55 miles. The soil is a sandy loam with clay loam subsoil and patches of boulders. It is rated second and third-class, and is suitable for grazing or cultivation. The surface is a rolling prairie, with scattered clumps of small poplar and willows fit for fuel or fencing. Fresh water is found in small

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 25.

ponds or sloughs, where also may be found a fringe of hay in small quantities. No stone quarries, minerals or water-power were found. Little Manito lake, whose water is alkaline, extends across the southern part of the township. Ducks, prairie chicken and deer were plentiful.—*E. J. Rainboth, D.L.S., 1903.*

Township 33.—This township, situated 50 miles from Dundurn, is reached by travelling across prairie. The soil, which is principally clay with some patches of gravel, is well adapted to cultivation. With the exception of the southeast quarter of the township, the surface is all rolling prairie. The southeast quarter is mostly covered with willow and poplar scrub; some of it fit for fuel. There are only a few small hay meadows and of no consequence. There are no permanent bodies of water. The growth seemed backwards, but I have no information as to summer frosts. There is no coal, quarries, minerals or game.—*J. E. Woods, D.L.S., 1903.*

Township 34.—This township is situated about 50 miles across prairie from Dundurn. The soil is principally clay, with occasional patches of gravel, containing a large quantity of clay. It is well adapted to cultivation. The surface is rolling prairie, without any timber or scrub. There are numerous small hay meadows scattered over the township, principally in the northern part. There are no permanent bodies of water. The spring was cold and backward, but I have no information as to summer frosts. There is no fuel, no quarries, no minerals and no game.—*J. E. Woods, D.L.S., 1903.*

Township 35.—The surface of this township is undulating and hilly in the vicinity of both the north and south boundaries, while near the centre some of the sections are comparatively flat. Surface water is abundant in sloughs and ponds during the earlier summer months. A considerable portion of the land is strewn or imbedded with erratic boulders averaging from 6 to 8 inches in diameter. There is no timber of any description, nor are there any running streams in the township. The country is well adapted for a summer range for pasture land or for mixed farming. As to its classification for agricultural purposes the land would rank from second to third-class. Minerals of economic value were not seen, nor were there any indications. The nearest timber supply would be some 12 miles to the north. The township is easily reached from Saskatoon, but there are no travelled roads through it. Jumping deer and antelope seem plentiful in the locality, also foxes, muskrats, ducks, grouse and plover.—*Thos. Fawcett, D.T.S., 1903.*

Township 36.—There are no travelled roads passing through the township, but it is in easy access from all directions. Saskatoon is the nearest base of supplies at present. The surface soil is a black and sandy loam from 6 to 12 inches deep with a clay subsoil. Some of the hills are strewn with boulders, both granite and limestone, which will furnish material for foundations for buildings. The township is adapted for mixed farming. The surface is undulating and considerably broken by sloughs and lakes. There is no timber of any description; the nearest supply will be about 12 miles northwest. There are marshes and flats in most sections which would furnish a limited supply of hay. During the earlier months of spring and summer there is an abundant supply of fresh water in the ponds and marshes. The permanent lakes are generally alkaline. There are no running streams, nor did we observe any springs of water. The vegetation in June was thrifty, and showed no indications of summer frosts. There are no indications of coal, nor of any economic minerals. Wood will be the cheapest fuel supply for some time to come. Red deer, antelope, elk, foxes, muskrat, polecat and wolves are seen on the prairie. Ducks, grouse and plover are plentiful in season.—*Thos. Fawcett, D.T.S., 1903.*

Township 37.—I proceeded to the survey of this township from Toronto by the way of the Canadian Pacific Railway to Saskatoon, from there I crossed the Saskatchewan river with my outfit and went eastward over a road or trail to the third meridian, intersecting the northern limit of township 37, near the said meridian. I

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 25.

then subdivided the several intervening townships following along near the trail and camped near it for the survey of this township. This trail is easily followed and is good enough for the uses of the early settlers. The surface soil is black loam averaging about 4 inches in depth over a sandy subsoil. There are many gravelly hills and ridges with less surface soil and usually the hills are covered with stones and boulders. Several settlers came to the neighbourhood while the survey was in progress, but had not located land. The township is generally too broken by hills and hollows and ponds for farming and is more adapted for cattle and horse ranching. This township is all prairie with no timber or scrub growing. Fire wood for fuel may be had in the adjoining township to the east and in other directions. Small ponds and hay marshes are very numerous in the hollows between the ridges and hills. The water is generally suitable for domestic use and my party did not find any alkaline effects from its general use. There are no running streams. As the shores of the ponds are often steep changes of wet or dry seasons would not cause much fluctuation in the areas of the waters. I would not anticipate much damage to crops of the usual kinds from summer frosts. No coal or lignite veins were seen nor any minerals of value. Limestone and other boulders strew the surface and might be used for lime and building purposes; no fixed rock was seen. Many ducks and prairie chickens are to be obtained. Antelopes and other deer were seen while foxes and badgers are very common.—*G. B. Abrey, D.L.S., 1903.*

Township 38.—I proceeded to the survey from Toronto by the way of the Canadian Pacific Railway to Saskatoon, where I completed my outfit. I then crossed the Saskatchewan river and went eastward over a trail to the third meridian reaching it near the line dividing townships 37 and 38. I commenced surveys here following along or near the said trail easterly to the camp from which this township was subdivided. The trail is easily followed and would serve the requirements of early settlers. The top soil of black loam averages in depth about 4 inches and is similar in all respects to that occurring generally throughout this part of the country. The subsoil is sandy; the higher parts are often gravelly with a thinner covering of surface soil and generally the tops of the hills are strewn with stones. The country is much broken with hills and hollows and the surface very uneven. It is too rough and broken to be desirable for farming, and is better adapted for cattle and horse ranching. Most of the township is prairie but some poplar timber and scrub is found. Hay may be obtained along the shores of many ponds and marshes. There are no streams as all of the water is confined in the ponds, sloughs and marshes. It is abundant and generally suited for domestic purposes as there is not enough alkali to be injurious. There are no water-powers. Summer frosts did not seem to be prevalent. Fuel of poplar wood may be had in sufficient quantities for local use. No coal or lignite was seen. Limestone and other boulders can be picked up for lime and building, but no economic minerals were seen and no fixed rock shows at the surface. Some settlers commenced to make improvements while the survey was in progress. Many ducks and prairie chickens may be had. Antelopes and other deer were seen. Foxes' and badgers' holes and burrows honey-comb all dry places.—*G. B. Abrey, D.L.S., 1903.*

Range 26.

Township 29.—A deep ravine enters this township in section 34 and runs in a southeasterly direction through sections 35, 26, 23, 14, 13, 12 and 1. The bottom of the ravine is covered either by lakes or muskeg containing very alkaline water. That part of the township situated on the west side of the ravine is very rough and hilly and contains many sloughs and ponds, in all of which good water is found. The country on the east side of the ravine undergoes a sudden transformation. It becomes more level and the land becomes of a much better quality. The high knolls stop at

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 26.

the ravine. There is quite a growth of poplar from 3 to 6 inches in diameter along the west bank of the ravine in sections 34, 27 and part of 22. A good quantity of hay is to be found about the sloughs. There are no minerals of any kind. The country on the east side of the ravine rates as third-class and second-class on the west. All the sloughs and ponds contain good fresh water.—*A. F. Martin, D.L.S., 1903.*

Township 30.—A deep ravine runs from section 33 inclusively, southward through sections 28, 21 and 16, and then southeasterly through sections 9 and 3. A large lake covers part of sections 28 and 29 and extends north and south following the ravine. The water in this lake is quite reddish and is very salty. Large flocks of wild geese and ducks swarm in this lake. The country on the west side of the ravine is very broken and hilly, but it becomes more level on the east side. A large quantity of good hay can be gathered about the numerous sloughs to be found therein. A good sized bluff of second-growth poplar is to be found on the slope of the banks of the ravine on the east boundary of sections 4 and 9. There are no minerals of any kind. Water is very good in all the sloughs and ponds. The soil on the west side of the ravine is composed of a thin coat of sandy loam, with a subsoil of sand. In sections 29 and 33 and in the vicinity of the lake referred to, the land is literally covered with stones, on the ridges the soil is gravelly and stony.—*A. F. Martin, D.L.S., 1903.*

Township 31.—This township was reached by travelling about 50 miles, without any trail, over a rolling prairie from Dundurn station on the Canadian Pacific Railway (Prince Albert branch). The soil is a sandy loam, with clay loam subsoil and some scattered boulders, and is rated second and third class, suitable for grazing or cultivation. The surface is a rolling prairie. Fresh water is found in a number of ponds or sloughs surrounded by a fringe of hay, and a small lake was located on section 9. No stone quarries, fuel, minerals or water-power. Ducks and chickens were plentiful.—*E. J. Rainboth, D.L.S., 1903.*

Township 32.—This township was reached by travelling about 50 miles across country, without any trail, over a rolling prairie from Dundurn station on the Canadian Pacific Railway (Prince Albert branch). The soil is a sandy loam and gravelly subsoil rated second, third and fourth class, with some patches of boulders. It is suited for grazing or cultivation. The surface is a rolling prairie, and fresh water is found in a number of small ponds or sloughs around which may also be found a small quantity of hay. No stone quarries, fuel, minerals or water-powers were found. Little Manito lake extends east and west across the middle of the township. Its water is alkaline. Ducks and prairie chicken were plentiful.—*E. J. Rainboth, D.L.S., 1903.*

Township 33.—This township is situated about 40 miles due east across prairie from Dundurn. The soil is principally clay somewhat stony on the ridges, and is well adapted to farming. The surface is high rolling prairie, with numerous small ponds in the early spring. There is no timber, no hay meadows of any extent, no permanent bodies of water, no fuel, no coal, no stone quarries, no minerals. A few antelope were the only game seen.—*J. E. Woods, D.L.S., 1903.*

Township 34.—I reached this township by travelling across the prairie from Dundurn; the prairie was hard, and travelling very good. The soil is principally clay, with a few gravelly and stony ridges, suitable for wheat growing. The surface is all a rolling prairie, devoid of timber or scrub. There is not much hay land; what there is of it is in small patches. The water is all alkaline, with the exception of a few small ponds that dry up in summer. I did not see any summer frost in this district. The indications are that the climate is dry and cold in winter. I have not seen any supply of fuel to be had excepting coal to be hauled from the railway. There are no quarries, no minerals and no game.—*J. E. Woods, D.L.S., 1903.*

Township 35.—This township is easily reached from Saskatoon, some 40 miles west, which is at present the nearest town with railroad facilities. There are no travelled roads through the township, but it is easy of access from any direction. The

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 26.

soil throughout is a dark sandy or clay loam on a clay subsoil. The surface is rolling, and broken by lakes and ponds. The township is adapted for mixed farming. There is no timber; the nearest supply would be about 15 miles distant in a northwesterly direction. Hay marshes, which are pretty generally scattered over the township, would produce enough hay for local consumption. Fresh water is plentiful in the smaller ponds and marshes. The larger lakes are very much impregnated with alkaline substances. There are no streams of running water, nor did we observe any springs. The luxurious growth of grass, &c., would indicate favourable climatic conditions. No indications of coal or other minerals of economic value were seen. Stone for foundations and other building purposes, both granite and limestone, is present in the shape of boulders. Red deer, antelope, foxes, wolves and muskrats seem plentiful, while the lakes and marshes are well stocked with ducks, plover and occasionally geese. There are also prairie chickens, but these are more plentiful where the country is settled.—*Thos. Fawcett, D.T.S., 1903.*

Township 36.—The entire township is open rolling prairie, partly broken with sloughs and ponds of water, which provide a supply during the earlier summer months and some years permanently. The soil is a dark clay or sandy loam overlying a clay subsoil. Many of the hills and some portions of the flat surface are covered with round well-worn boulders. Vegetation appears thrifty, and indicates a strong fertile soil. The country is well adapted for pasturage, and some of the sloughs would afford a fair supply of hay; but there is no reason why a good percentage of the land should not be adapted to agricultural purposes. The land would rank generally as second-class. There are no travelled roads passing through the township, but it is easily accessible from any direction. There is no timber in the township, but considerable within a day's (return) journey to the west. No minerals of economic value were seen, but stone for building and lime will be found in abundance in the shape of boulders and erratic block masses. As to game, one may expect to find elk, red deer, antelope, ducks, prairie chickens, foxes, wolves and muskrats. There are no living streams flowing through the township, but good water could usually be obtained by digging.—*Thos. Fawcett, D.T.S., 1903.*

Township 37.—I proceeded to this survey from Toronto by way of the Canadian Pacific Railway to Saskatoon. I crossed the Saskatchewan river there and travelled easterly with my outfit along a trail or road to the third meridian, reaching it near the northern boundary of township 37. From here I made subdivisions of townships, continuing east and along the route of the trail to the camp, a short distance south of the road, from where the subdivision of this township was made. This road was easily followed, and is sufficient for the requirements of early settlers. The soil of this township is similar to others in the locality, and averages about 4 inches in depth of black loam over a subsoil of a sandy nature. The hills are often gravelly, and nearly always scattered over with stones and boulders. Because of the broken nature of the surface the township is not adapted for general farming, but is better adapted for cattle or horse ranching. Nearly the whole township is prairie; some poplar timber and scrub appear here and there only. Small ponds and marshes are everywhere among the hills, and water is abundant. Hay marshes are not large, but grass grows on the margins of most wet places, and hay may be obtained. There are no running streams, and all of the water is in the ponds and marshes; it is usually suitable for drinking or domestic use. The water areas would not fluctuate to so great an extent from changes of seasons as would be the case in a flatter country. I observed no evidence that summer frosts would interfere with the raising of crops suitable to the country. No coal or lignite was seen. Limestone boulders may be picked up and burned into lime, and they with other boulders may be used for building. No fixed rock was seen, and no economic minerals were found. Many ducks and prairie chickens are to be had. Antelope and other deer were seen, and foxes and badgers were numerous.—*G. B. Abrey, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN— RANGE 26.

Township 38.—I proceeded to the survey from Toronto by way of the Canadian Pacific Railway to Saskatoon; I then crossed the Saskatchewan river and went easterly along a trail or road to the third meridian, reaching it near the southern boundary of township 38. From here I commenced the subdivision of townships and continued eastward along the route of the trail to the camp a short distance north of it, from which the survey of this township was made. This trail was easily followed, was in fair condition and sufficient for the requirements of early settlers. The soil averages about 4 inches of black loam with a sandy subsoil; like the rest of this hilly part of the country the hills are often of gravel and covered with boulders. From its broken nature it is not suited for general farming and would be better adapted for ranches. The country is generally prairie, but a considerable portion of it is covered with poplar and willow scrub; the poplar is of sufficient size to be used for the buildings of the settlers. Small ponds and marshes are numerous, interspersed among the hills, and water is abundant. Around the marshes hay may be cut. The water is all in these ponds and marshes. No running water exists. The water covered areas would fluctuate to a less extent than would be the case in a flat country. Water is generally suitable for domestic use and but little of it is alkaline. I saw no evidence that summer frosts would interfere with the raising of crops. No coal or lignite was seen. Limestone boulders may be used for burning into lime and they with other boulders could be used for buildings. No fixed rock was seen and no economic minerals exist. Many ducks and prairie chickens are found. Antelopes and other kinds of deer are seen. Foxes and badgers are very common.—*G. B. Abrey, D.L.S., 1903.*

Range 27.

Township 29.—This township is covered by a continual succession of ponds, sloughs, and knolls, varying in height from twenty to seventy-five feet. A fair quantity of hay could be gathered from and about the sloughs. There is no timber nor minerals of any kind. The whole township is covered with a luxurious growth of bunch grass. The soil is composed generally of sand on top of the hills while clay loam is found between the hills. The soil rates third-class throughout. Good fresh water is found in all the ponds and sloughs. There is no timber nor minerals of any kind.—*A. F. Martin, D.L.S., 1903.*

Township 30.—This township is rough and hilly with numerous ponds and sloughs and knolls varying in height from twenty to seventy feet. These knolls, some with high peaks, others in the shape of a ridge and a few in the form of beaver dams, resemble the Rocky mountains in miniature. At a distance, the country looks like a huge choppy sea. Water is good in all the sloughs and ponds. Good hay grows around the sloughs and a good supply of it can be obtained. In the northeast corner of the township, the hills are less steep and the country seems to assume a more level form, although it still keeps a high level. There is no timber nor minerals of any kind. Antelope seem to make their home among the hills. The soil is very light throughout. This country is only fit for ranching.—*A. F. Martin, D.L.S., 1903.*

Township 31.—This township was reached by travelling about 45 miles from Dundurn station on the Canadian Pacific Railway (Prince Albert branch) over a rolling prairie. The soil varies from sandy loam to clay loam rated mostly second-class, suitable for cultivation or grazing. The surface is an open rolling prairie and fresh water is found in scattered ponds and marshes, the latter generally having a good growth of hay. No quarries, fuel, minerals or water-power were found. Ducks were plentiful and an occasional antelope.—*E. J. Rainboth, D.L.S., 1903.*

Township 32.—This township was reached by travelling about 45 miles over rolling prairie from Dundurn station on the Canadian Pacific Railway (Prince Albert branch). The soil is a sandy loam and clay loam, with boulders, rated second, third

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 27.

and fourth class, suitable on the whole for stock raising, rather than for cultivation. The surface is a rolling prairie. Fresh water is found in abundance in numerous ponds and hay marshes and a small lake is situated on sections 26, 27 and 34. No quarries, fuel, minerals or water-powers were found. Ducks were numerous and an occasional antelope.—*E. J. Rainboth, D.L.S., 1903.*

Township 33.—Dundurn is the nearest railway station, about 45 miles across prairie. The soil is principally hard clay, very dry, which would no doubt become friable with cultivation, and would make good wheat land. There are several alkaline flats which indicate that land must be carefully selected, as there is alkali in the ground even where it does not show at the surface. The surface is all rolling prairie, with a few stony ridges. There are good hay meadows on sections 31, 32, 20 and 29. There is no timber, no fuel, no stone quarries, no coal, no minerals, no streams, no permanent bodies of fresh water; the permanent lakes being all strongly alkaline. The early spring was cold and frosty and no game was seen.—*J. E. Woods, D.L.S., 1903.*

Township 34.—I reached this township by travelling across prairie from Dundurn a distance of about 40 miles. The soil is good clay, rather hard, but would improve with cultivation, and is suitable for wheat growing. The surface is all prairie, some of it rolling, with gently undulating stretches between the ridges. There is no timber, no hay land and no permanent bodies of water. There was some frost about the middle of May, but none after that date. There is no fuel, no coal, no quarries, no minerals. A few antelope were seen in the distance.—*J. E. Woods, D.L.S., 1903.*

Township 35.—The surface of this township is hilly and the majority of the hilltops are stony. The land is scarcely adapted for cultivation, but is excellent grazing land. Each section would probably afford enough land for cultivation to satisfy the requirements of home consumption, were mixed farming carried on. Fresh water ponds and sloughs are numerous, while some marshes would produce a good supply of hay. The soil in general is a clay loam, with subsoil of heavy clay. There are a few clumps of heavy poplar and willow scrub but no timber of utility. The nearest supply suitable for building would be about 12 miles north. No minerals of any description were seen nor any rock outcrop. The township is easily accessible from any direction, but no regularly travelled trails pass through it. Antelope and red deer were seen; the ponds were well stocked with ducks and plover. Foxes and muskrats are very numerous. There are some prairie wolves and badgers.—*Thos. Fawcett, D.T.S., 1903.*

Township 36.—This township is open, undulating prairie, considerably broken by alkaline lakes and sloughs, more especially in the southeast quarter. In other portions there are several hay marshes and ponds, generally containing fresh water. The country is better adapted for mixed farming than for any particular branch of agriculture. There is no timber of any description; the nearest supply will be about six miles from the north boundary. There are no running streams nor springs, but a sufficient supply of fresh water in the ponds and sloughs to suffice for ordinary seasons. There was little growth this season until after May 24, after which date it became very rapid, unimpeded by frosts or cold weather. Wood will be the cheapest fuel supply for some time to come. There are no indications of coal nor of any minerals of economic value. The game found is elk, red deer, antelope, coyotes, muskrat, badgers, &c. The fowl are ducks, grouse, plover and geese during some part of the year. There are no travelled roads passing through the township, but it is easy of access from any direction. The nearest point from which supplies can be obtained is Saskatoon, about 40 miles distant.—*Thos. Fawcett, D.T.S., 1903.*

Township 37.—I went to this township by way of the Canadian Pacific Railway from Toronto to Saskatoon, thence crossed the River Saskatchewan and travelled along easterly over a fairly well defined trail or road to the third meridian, intersecting it near the northern boundary of township No. 37, and continued east along this trail to the camp, from which the township was subdivided. This road from Saskatoon was in

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 27.

good condition and quite sufficient for the requirements of the early settlers. The soil averages about four inches in depth of black loam, with subsoil generally of a sandy nature; the hills and ridges are covered with a shallower depth of loam, and are usually stony with a gravelly subsoil. There is sufficient depth of loam, but on account of the surface being broken by hills and ponds the country is not well adapted for ploughing or farming, and is better suited for ranching. The surface generally is prairie, but in places is covered with scrub and timber; probably 10 per cent of the area is scrubby or wooded. The timber is poplar and willow. Some of the poplar is large enough for building purposes. The northern portions of the township contain most of the timber. Small hay marshes abound generally. The water is all in the marshes, ponds and small lakes, and my party used it generally for drinking and did not experience any ill effects from alkali. Some of the ponds are quite deep, but would fluctuate with dry or wet seasons. There are no streams or running water. There is no water power. We did not have injurious frosts in the summer of 1903 during our survey. Poplar wood for fuel may be obtained in the northern parts of the township. No coal or lignite was seen. Limestone boulders are scattered over the surface and may be utilized for burning into lime. No fixed rock was seen or economic minerals. Many ducks, prairie chicken, antelope and some other kinds of deer are to be found.—*G. B. Abrey, D.L.S., 1903.*

Township 38.—I went to this township by way of the Canadian Pacific Railway from Toronto to Saskatoon, thence crossed the River Saskatchewan and travelled easterly along a road or trail, fairly well defined, to the third meridian, intersecting it near the southern boundary of township No. 38, and continued easterly along this trail until near the camp, from which the township was subdivided. This road from Saskatoon was in good condition and quite sufficient for the requirements of early settlers. The soil averages in depth about four inches of black loam; the subsoil is usually sandy. The tops of hills are generally covered with stones, and there are many gravelly ridges, and where these occur the loamy soil is shallow. There is a sufficient depth of soil to grow crops, but on account of the broken nature of the country the steep and high hills with ponds between, the township is not well adapted for farming and would be better suited for ranching purposes. The surface is generally prairie, but has timber and scrub growing in places; about a sixth of the whole may be wooded or scrubby. The timber is poplar and willow, and much of the poplar would be suitable for building settlers' houses. The timber is pretty well distributed in clumps over the township. Small hay marshes are everywhere, covering more of the shallow marshes and the margins of the deeper ones. The water is all contained in the marshes, ponds and small lakes. My party used it generally for drinking, and did not find any ill effects from alkali. Some of the ponds are quite deep, but would fluctuate with wet and dry seasons. There are no running streams or creeks. There are no water-powers to develop. We did not have any injurious summer frosts during the season of the survey. Poplar wood for fuel may be had pretty generally over the township. No coal or lignite was seen. Limestone boulders are scattered over the surface and could be used for burning into lime. No fixed rock was seen or any economic mineral. Many ducks, prairie chicken, antelope and some other kinds of deer are to be found.—*G. B. Abrey, D.L.S., 1903.*

Range 28.

Township 29.—This township is literally covered with knolls varying in height from twenty to eighty feet and with numerous sloughs and ponds. At the foot of almost every knoll lies a pond or a slough, all of which contain good water. A valley about 140 feet deep enters the township in section 32 and runs southeasterly across the township through sections 29, 30, 19, 20, 17, 16, 15, 9, 10, 4 and 5. Arm river, a

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 28.

small stream with a very slow current runs in the centre of this valley. The water in this stream is very alkaline. This township is entirely devoid of timber of any kind. A fair supply of good hay can be gathered about the sloughs. There is no mineral of any kind. Antelope and ducks are very numerous. The soil is generally composed of a light coat of clay loam, with a subsoil of sand. It is rated third-class throughout.—*A. F. Martin, D.L.S., 1903.*

Township 30.—This Township is a complete network of knolls, sloughs and ponds to be met alternately at about every five chains in every direction. The knolls vary in height from twenty to seventy-five feet and assume all sorts of shapes and forms. Arm river takes its source from a large slough lying in a deep valley or ravine in section five and runs southeastward. This ravine branches out westward and northeastward at a short distance north of section 5. Water is good and fresh in all the sloughs and ponds but it is bitterly alkaline in Arm river. The soil throughout is sandy and is rated third class. Antelope and ducks are very numerous. An abundant and luxurious crop of bunch grass covers the whole township. Hay can be got in fair quantity about the sloughs. There is no timber nor minerals of any kind.—*A. F. Martin, D.L.S., 1903.*

Township 31.—This township was reached from Dundurn station on the Prince Albert branch of the Canadian Pacific Railway, from which it is separated by about 40 miles of rolling open prairie. The surface is hilly and rolling open prairie with numerous hay marshes, containing good fresh water. No wood, minerals or water-power. Soil is sandy loam and clay loam with patches of boulders on top of knolls and is rated second and third class. Fit for cultivation but more suitable for grazing. A small lake which was surveyed is situated on section 28.—*E. J. Rainboth, D.L.S., 1903.*

Township 32.—This township is an open rolling prairie with a good growth of grass and numerous fresh water marshes and sloughs. No wood. The soil is second class, being a clay loam. A small alkaline lake about 400 acres in extent, is situated in the northeast part of the township. The township is fit for cultivation or grazing. *E. J. Rainboth, D.L.S., 1903.*

Township 33.—This township is accessible by travelling across prairie from Dundurn. The soil is principally clay, with a few gravelly ridges suitable for wheat-growing. The surface is all rolling prairie devoid of timber and scrub. The hay land is all in small patches. The water is all alkaline, with the exception of a few small ponds that dry up in summer. I have seen no summer frosts; the indications are that the climate is dry in summer and little snow in winter. Fuel will have to be drawn from the railway. There are no quarries, no minerals and no game.—*J. E. Woods, D.L.S., 1903.*

Township 34.—This district is accessible across prairie from Dundurn over a hard undulating prairie. The soil is principally clay, with stony patches, suitable for wheat-growing. The surface is undulating prairie, devoid of timber or scrub. The hay land is in small patches. The permanent bodies of water are all alkaline. I saw no indications of summer frosts. The climate appears to be exceedingly dry, and probably very cold in winter. Fuel will have to be hauled from the railway. There are no quarries and no minerals. There were quite a number of ducks on the lakes.—*J. E. Woods, D.L.S., 1903.*

Township 35.—The surface throughout is undulating and hilly prairie, there being no timber with the exception of a few clumps of scrub poplar and willow in the northeast quarter of the township, but timber can be obtained about 10 miles north of the township. The soil is either a clay or sandy loam to a depth of from 6 to 12 inches, underlaid with clay subsoil. Some portions of the township are quite stony, especially on hills, where there are numerous small boulders seldom exceeding 12 inches in diameter. During the earlier summer months there is a plentiful supply of fresh water

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 28.

in the numerous sloughs and ponds with which the surface is broken. There are three or four permanent lakes of small size which are alkaline. There are no travelled roads or trails through the township, nor any streams of running water. The land as to quality would be classed as second and third class. Hay marshes occur in nearly every section of the township. There are no indications of minerals of economic value. Antelope and red deer were seen; also ducks, geese, plover, grouse, foxes, muskrats and wolves.—*Thos. Fawcett, D.T.S., 1903.*

Township 36.—The surface of this township in general is rolling to hilly prairie, with many ponds of fresh water and some hay marshes. Many of the hills contain deposits of gravel and of imbedded boulders, which unfit these portions for anything except pasture land. The surface soil varies from a black sandy to a clay loam usually about 8 inches deep, with a clay subsoil. The hills are more in evidence across the north end and on the east side of the township than in the other portions. The more level sections would be suitable for cultivation, while the hilly ground would afford excellent grazing. There are no running streams in the locality, and no wood of any description in the township. The nearest supply of wood is located about 6 miles north. There are no indications of minerals of economic value. There are no travelled roads through the township, but it is easily reached from Saskatoon or from any direction. Antelope, jumping deer, foxes, wolves and muskrats were seen; also ducks and prairie chickens.—*Thos. Fawcett, D.T.S., 1903.*

Township 37.—I went to this work from Toronto to Saskatoon by way of the Canadian Pacific Railway, crossed over the river Saskatchewan and thence easterly along a road or trail to the third meridian, intersecting it near the northern boundary of the township, and thence to camp, from which the subdivision was made. This road was in fair condition and well enough defined to answer the requirements of early settlers. The soil is black loam about 4 inches in depth, with a sandy subsoil (on the ridges there is often considerable gravel) and the hills are covered with stones and boulders. There is sufficient soil for farming, but as the country is so broken with hills, hollows and marshes, it is better adapted for ranching purposes than for agriculture. The township is prairie, with no scrub. There is no timber whatever. Small marshes and ponds abound, the margins of which produce grasses for hay. The water is all contained in the small lakes, ponds and marshes. No alkaline effects were experienced by my party from drinking the water. Many of the ponds are quite deep with steep sloping shores; they would probably fluctuate in area and depth with seasons wet or dry. There are no streams or running waters. Frosts occurred during the season of survey in May. Poplar for fuel may be obtained from the northeast at a reasonable distance. No coal or lignite was observed. No economic minerals were seen. The limestone might be burned into lime. No fixed rock was observed. Many ducks and prairie chickens were seen. Antelopes and other kinds of deer roam over the country; foxes, badgers and other burrowing animals are common.—*G. B. Abrey, D.L.S., 1903.*

Township 38.—I proceeded to this work from Toronto to Saskatoon by way of the Canadian Pacific Railway thence crossed Saskatchewan river, and went easterly along a road or trail fairly well defined to the third meridian, intersecting it near the southern boundary of the said township and thence to camp from which the township was subdivided. This trail is sufficiently good for the needs of explorers and pioneer settlers. The soil is a black loam averaging about 5 inches in depth, with a sandy subsoil, with gravel on the ridges and loose stones and boulders on the hills. There is sufficient depth of the surface soil for farming, but because of the broken nature of the country, the hills and hollows with ponds, it is better suited for ranching than for wheat or general farming. The township is prairie, with scarcely any timber. Small hay marshes occur generally. The water is all contained in ponds and small lakes and no ill effects were experienced in drinking it by my party. Some of the ponds are quite

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 28.

deep and steep on their shores; they would probably fluctuate in area and depth between dry and wet seasons. There are no streams or running waters. Frosts occurred in May while the survey was being made. Fuel of poplar wood may be had by going to the northward or eastward a short distance. No coal or lignite was seen. Limestone boulders are scattered over the surface on the hills and could be used for burning into lime. No economic minerals were observed. No fixed rock was visible. Many ducks, prairie chickens, antelope and other deer were seen.—*G. B. Abrey, D.L.S., 1903.*

Range 29.

Township 29.—This township can be better described as a rough hilly country, broken by numerous ponds and sloughs and knolls, varying in height from 25 to 75 feet, and lying very close to one another. These knolls look as if they had been planted indiscriminately and let to grow in all sorts of fantastic forms. They represent the Rocky mountains in miniature. There is good fresh water in all the ponds and sloughs. Some of the ponds in the form of an artificial fountain, measuring about 50 links in diameter, and containing good, pure and fresh water, are to be found on the very top of high knolls. At a height of 100 feet, the country looks like a choppy sea. A luxurious crop of sweet bunch grass grows all over the country. Between the hills the soil is of a fair quality, but the country is more adapted to ranching. Good hay is to be found in good supply around the numerous sloughs lying between the hills. There is no timber (not even wood for fuel) to be found in this township. There is no mineral of any kind nor any quarry. This country seems to be the home of the antelope, which are seen frequently in large numbers.—*A. F. Martin, D.L.S., 1903.*

Township 30.—This fractional township is composed of high knolls of all kinds of shapes and forms, and varying in height from 25 to 75 feet. The northwest corner of this township especially is but a network of knolls and sloughs. These knolls lie so close to one another that it is impossible at some places to obtain a proper base for triangulation. Numerous sloughs are encountered between the hills and ponds are to be found in some places at the very summit of a high knoll. The country is very rough and broken. The water is generally good in all ponds and sloughs. Two lakes of considerable size lie on sections 12, 13 and 14. They come within fifty links of one another. Water in the two lakes is very alkaline. On the south shore of lake No. 2 and at the southeast corner of said lake a small quantity of soft maple and poplar can be found. This is the only timber that can be found within the township, and it can only be used for fuel. There are no minerals. Hay can be got in small quantity only about the sloughs. There is good pasturage throughout. The township is only adapted for ranching.—*A. F. Martin, D.L.S., 1903.*

Township 31.—The surface is rolling and hilly, all open prairie with an excellent growth of grass. Fresh water is abundant in the numerous sloughs. The soil is generally a clay loam, but very stony, rated second and third class, and is suitable only for grazing. No wood.—*E. J. Rainboth, D.L.S., 1903.*

Township 32.—The surface is rolling, open prairie, with good grass and hay around the numerous fresh water sloughs or marshes. No wood, minerals or water-power. Soil is sandy loam and clay loam, rated mostly second class. The township is fit for cultivation and grazing. It is easily reached from Dundurn station on the Canadian Pacific Railway (Prince Albert branch), distance about 35 miles across rolling country, without any trail.—*E. J. Rainboth, D.L.S., 1903.*

Township 33.—This township is situated about 30 miles across prairie from Dundurn. The soil is clay and well adapted to farming. The surface is high rolling prairie. There are no hay meadows of any extent. No timber, no permanent bodies of water, no fuel, no coal, no minerals, no stone quarries and no game.—*J. E. Woods, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SECOND MERIDIAN—RANGE 29.

Township 37.—The township was reached by a trail running easterly from Saskatoon on the Canadian Pacific Railway. This trail intersects near the line between townships 37 and 38 and in ordinary seasons would be a fairly passable road. The soil is black loam of fair depth with sandy subsoil, gravelly and stony on the hills. The country is much broken with hills, sloughs and marshes and would be better suited for ranching than for wheat growing or general farming. The country is prairie with no timber. Some scrub is found on edges of sloughs and hill slopes. Hay may be cut in the marshes and most kinds of grasses usual to the country are to be found. My party did not suffer from using the water found everywhere. No running water or streams were seen and during dry seasons a good deal of the water might evaporate, but there was much wet land and many sloughs while the survey was being made. Frosts occurred at night during May. Poplar wood for fuel can be obtained from the north at no great distance. No coal or lignite was seen. No fixed rock was observed, but stones for lime or building purposes may be picked up from the surface. No minerals of economic value were seen. Ducks, prairie chicken, antelope and some deer are to be found.—*G. B. Abrey, D.L.S., 1903.*

Township 38.—The township was reached by a trail running easterly from Saskatoon on the Canadian Pacific Railway. This trail intersects near the southwest corner of the township and would in ordinary seasons be a fairly good road. The soil is black loam of a few inches in depth with a sandy subsoil with gravel and stones on the ridges. The country is much broken with hills, sloughs and marshes and is better suited for ranching than for general farming. The surface is prairie with no timber. Some scrub shows on the edges of sloughs and hill slopes occasionally. Hay may be made in the marshes and most kinds of grasses usual to prairies grow here. None of my party suffered from using the water found everywhere. No running streams exist, and during dry seasons probably much of the water would dry up. During the time of the survey much of the country was wet and covered by water. Frosts were general during May. Poplar for fuel may be had a short distance northerly. No coal or lignite was seen. I saw no fixed rock, but stones suitable for lime or buildings may be picked up on the surface. No minerals of economic value were seen. Ducks, prairie chicken, antelopes and some other deer were seen.—*G. B. Abrey, D.L.S., 1903.*

TOWNSHIPS WEST OF THE THIRD MERIDIAN.

Range 1.

Township 27.—The soil consists of a light black loam with a subsoil of sand. Water can be got by digging, but good water is scarce. A small quantity of hay can be gathered in and about the sloughs. There is no timber nor wood of any kind. There is no sign of any minerals. The Prince Albert branch of the Canadian Pacific Railway crosses this township in a northwesterly direction from section 1. The land throughout this township requires a great deal of moisture.—*A. F. Martin, D.L.S., 1903.*

Township 28.—The soil consists of a light coat of sandy loam with a subsoil of sand. The northeast corner of the township is rather broken with knolls, being the beginning of the ranges of knolls to the north. Good water is scarce, the surface water even is alkaline. There is no timber of any kind and hay is also scarce. There is no indication of minerals of any kind. Weather at the time of the survey was rather stormy and cloudy.—*A. F. Martin, D.L.S., 1903.*

Township 29.—The soil in this township where it is not stony or gravelly, is clay loam, with occasional stretches of sand. The land is all open prairie with occasional isolated clumps of alder and willow. It is almost all knolly but could scarcely be

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 1.

termed hilly. Small sloughs are numerous but no large ones. There are no hay meadows but a small strip of hay is to be found around nearly all the sloughs. They are all full of grass but it is of a coarse variety and cannot be cut owing to the depth of the water. The land is too rough, knolly and stony to be suitable for farming but would make a good summer ranch. A moderate herd of cattle might also be maintained during the winter, if the available hay could be supplemented by roots. The most direct route to the township is from Bonnington station on the Regina and Prince Albert Railway. There is no timber, consequently fuel will have to be imported. There are no streams but good water can be had at a moderate depth by digging wells. I experienced no summer frosts but the weather was cold, there being some very high winds and cold rains. I am of the opinion that the season was an exceptionally cold one. Antelope were numerous, also muskrats, foxes and ducks. There are no minerals nor stone quarries.—*James Dickson, D.L.S., 1903.*

Township 30.—The eastern part of this township may be described as knolly, although none of the knolls are high. The soil, where it is not stony, is chiefly clay loam. Marshes are very numerous but small. Good hay is scarce and is confined to the margins of the marshes and ponds. A few quarter sections in the western part of the township consist of fairly good land. Some farms might be located here and the remainder of the township used for ranching purposes, as the pasture is good. The water is also good and abundant. The township may be reached from Bonnington station, on the Regina and Prince Albert Railway. From this point a good wagon trail into the township may be found without difficulty. There is no timber, only isolated alder or willow bushes, consequently fuel will require to be imported. There are no streams but the water in the ponds and sloughs is all good. There was no frost during my season's work but high cold wind almost continuously. The rains also were all cold. Antelope, muskrats, skunks, foxes, badgers and ducks were numerous. There are no stone quarries nor minerals.—*James Dickson, D.L.S., 1903.*

Township 31.—This is a poor township, but a strip of fairly good land, embracing the two centre ranges of sections extends all across it. The land is knolly, but the soil is a good clay loam. The other parts are hilly, rough and largely stony. Marshes are numerous. In the report of the outlines, there are said to be 'numerous lakes, some of which are not less than one-half mile square.' This is certainly erroneous. I took particular pains to ascertain the sizes. The largest lake is on the east meridian, at the intersection of the southeast corner of section 23, and the northeast corner of section 14, and it has not an area of more than 12 or 15 acres. Almost all the others are simply sloughs, the water in most cases being completely covered by long coarse grass. Numerous small lakes are shown along the west boundary. Not one of these is other than a trifling little slough of very coarse hay. That on section 19 is a small, nearly dry slough about six acres in area, lying ten chains south of the chord. At that point, the line is completely dry hard soil. There are no hay meadows. The land is all open prairie without timber. The climate is good and I experienced no summer frosts. There are no streams, but the water in the sloughs is nearly all good. The township is easily accessible from Hanley station on the Regina and Prince Albert Railway. Antelope and muskrats are numerous. There are no stone quarries nor minerals.—*James Dickson, D.L.S., 1903.*

Township 32.—The southern part of this township is rough and knolly, with numerous small marshes. The soil is stony and gravelly, adapted for the most part only for pasture lands. The two northern tiers of sections slope gently to the north, and the soil is a rich clay loam well adapted for farming. The land is all open prairie. There are no hay meadows nor any timber. No running streams are to be found, but the water in the sloughs is good. I think, also, that water may be found in abundance at a moderate depth in almost any part of the township. It is readily accessible from Dundurn station on the Regina and Prince Albert Railway, no road making being

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 1.

necessary. Antelope, muskrats and small game are abundant. There are no stone quarries nor minerals.—*James Dickson, D.L.S., 1903.*

Township 38.—This township was reached by a trail running easterly from Saskatoon on the Canadian Pacific Railway, and intersects near the southeasterly corner thereof. This road would be a fairly good one in dry seasons. The surface soil is black loam of a few inches in depth. Below is sandy and on the ridges it is gravelly and stony. The country is much broken with hills and marshes, and is not well adapted to general farming, but is available for ranching. The country is prairie, with no timber growing. Some scrub grows around some of the marshes and hill slopes. Hay may be made in the marshes and most kinds of grasses usual to prairies are found here. The water found everywhere did not cause inconvenience to my party in any way. There are no running streams, and in dry seasons probably much of the water would dry up. There are no water-powers. Frosts were general during the season of survey (May 11 to 13). Poplar wood for fuel may be obtained a short distance to the north. No coal or lignite was found. No fixed rock was found, but stones and boulders suitable for lime or buildings can be picked up. No minerals of economic value were seen. Ducks, prairie chicken, deer and antelope are to be seen.—*G. B. Abrey, D.L.S., 1903.*

Range 2.

Township 29.—The Regina and Prince Albert Railway passes through the southwest corner of the township, entering it at the southeast corner of section 4 and leaving it in the southwest quarter of section 30. The wagon trail leading from Regina to Saskatoon also runs parallel to the railway at a few chains distance on the east side. Bonnington station is in the northwest quarter of section 19. The soil is mostly clay loam, but in some parts is gravelly and stony. The sections traversed by the railroad, also those lying west of it, are good farming land, but the remainder is rough, broken and knolly, suitable only for pasturage. There are a considerable number of sloughs, but none of them large, and although they are all surrounded by narrow margins of grass, there is nothing which could be called a hay meadow. There is no timber of any description, with the exception of an occasional clump of alder or willow, nor is there any running water excepting two small streams, one of which crosses the west boundary on section 7, the other on section 19. Each stream is absorbed in a small slough. There was no frost worth speaking of during my season's work. The weather was cold and the winds were very high. I do not think it was a fair specimen of the average season. The water in all the sloughs which I tried was good, and can be had anywhere in abundance by digging to a moderate depth. Antelope were plentiful; also muskrats and ducks, and a few foxes, skunks and badgers. Prairie chicken were scarce. Firewood will have to be imported. I had to rely exclusively upon old railroad ties for fuel in the whole eight townships I surveyed there. There are no minerals nor stone quarries.—*James Dickson, D.L.S., 1903.*

Township 30.—The township is hilly in the west, also in the east, although none of the elevations are high. In these parts the land is stony and gravelly, not adapted for agriculture. The land is all open prairie, there being no timber whatever, only sufficient alder and willow bushes to serve as landmarks. The marshes are small and numerous, but there are no hay meadows. The soil is for the most part clay loam, slightly alkaline in sections 33 and 34. There is some good farming land in the interior of the township. Cygnet lake, on the northern boundary of sections 33 and 34, is alkaline. With that exception and a very few others, the water is good, but there are no running streams. Fuel will require to be imported. A good road may be found from Bonnington station without any outlay. Antelope, muskrats, foxes, skunks, badgers and ducks are numerous. There are no minerals nor stone quarries.—*James Dickson, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 2.

Township 31.—Both the eastern and western portions of this township are knolly, and in many parts stony; where that is not the case the soil is clay or loam. Though little of it is adaptable for agriculture, it would make an excellent ranch. The marshes are numerous, but there are no hay meadows. There are several small ponds, and almost all the water is good, excepting Cygnet lake and the small lake on sections 4 and 5. The water in both these lakes is bad. There are no streams. The land is all open prairie, and as there is no timber, fuel will require to be imported. I experienced no summer frost, and should consider the climate healthful, although the season was exceptionally cold and windy. The same varieties of game as in the adjacent townships are found here in abundance. There are no stone quarries nor minerals. The most convenient route into the township is from Hauley station on the Regina Railway. No labour at all will be necessary to make a good wagon road.—*James Dickson, D.L.S., 1903.*

Township 32.—A large percentage of this township consists of good land, well adapted for farming. The sections north of the north chord slope gently towards the north. South of that line it is knolly, but the soil is almost all good, consisting largely of clay loam. Small marshes and sloughs are numerous, around nearly all of which a considerable quantity of hay may be cut, but nowhere is there what might be termed a hay meadow. I found two or three dry water courses in which a flow of water can only be possible during a brief period in the spring, as their beds are all filled up with grass. Abundance of good water may be procured by digging. The most direct route into the township is from Dundurn station on the Regina and Prince Albert Railway, from which point there is a good wagon trail. The land is all open prairie, with no timber and no firewood. The climate, I should say, is good. I saw no indications of summer frost. In the surveyor's report of the outlines, sections 32 and 33 are reported as being broken by large ponds. This is erroneous, there being none there now. Antelope and other small game are numerous. There are no stone quarries nor minerals.—*James Dickson, D.L.S., 1903.*

Range 3.

Township 28.—This township is easy of access, being about 10 miles southwesterly from Bonnington, a station on the Prince Albert branch of the Canadian Pacific Railway. There is a fair trail for the greater part of the way, and as the prairie was dry, we had no difficulty in getting there. The soil is good, being chiefly clay loam, and is well adapted for wheat-growing and also other kinds of grain and roots. There is not a whole section in the township but could be cultivated to good advantage. The surface is gently undulating and is open prairie, none of which is flat or wet. No timber of any kind is to be found on any part of the township. There are no hay marshes or meadows. The only water to be found is in a few ponds that are not deep or large; the water in them is quite fresh and good. No alkali to be seen or found. The supply of water is not large, and in a dry season would be scarce. There are no streams or springs in any part of the township, and there is no water power. The climate seems to be favourable, and there does not seem to be any danger of summer frosts any more than in the surrounding country. The grain would ripen early on account of the dry nature of the soil. No fuel of any kind can be obtained in any part of the township, there being no timber nor are there any surface indications of coal or lignite. Minerals of any kind are entirely wanting; none to be seen anywhere. The only game is an occasional prairie chicken and an antelope. There are no ducks as there are no large ponds for them to go to. Taking the township as a whole, it may be rated as first class, and is well adapted for settlement, and it is reasonably convenient to railway and market. I have no doubt but in the near future this township will be all taken up and settled on.—*James Warren, D.L.S., 1903.*

4-5 EDWARD VII. A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN.

Range 5.

Township 28.—This township is easy of access from Bonnington station, on the Prince Albert branch of the Canadian Pacific Railway, it being about 20 miles south westerly from that station. This is an open prairie township, gently undulating, except in the northwest part where it is more hilly. The soil is chiefly clay loam and is well adapted for growing wheat and other grains, also roots. There is no timber or scrub on any part of the township, the surface being all open prairie. There are no hay meadows, the grass being chiefly short and not suitable for hay. Water is only obtained in ponds or sloughs of which there are a few. The water is good, no alkali being found. No streams occur and of course no water power of any kind. The climate would be favourable for the growing of grain and not much likelihood of summer frosts as the soil is dry. Fuel is scarce, none of any kind to be found on the township, nor are there any traces of coal or lignite. Stone is scarce, there being only a few scattered ones over the prairie and no fixed rocks or quarries. No minerals were found in any part of the township. Game of all kinds is scarce, only a few antelope and prairie chickens were seen. This may be rated as a first class township, as most of the soil is very good, except in the northwest part where it is harder and gravelly. This township is quite available for settlement.—*James Warren, D.L.S., 1903.*

Township 52 (north outline).—To the north of the base line in this range lies a narrow lake, several miles long, called Stump lake, so named because of the many stumps found on its shores. The shores had been flooded which killed nearly all the spruce with which the land had been timbered. The western extremity of this lake lies in section 35 and in part of section 36. The north boundary of section 31 intersects the northern extremity of a lake one mile long and about a quarter of a mile wide. Near the northeast corner of section 32 there is another but smaller lake, and the western boundary of a timber limit, which includes the whole of sections 33, 34, 35 and 36 in this range. The country is rolling with many lakes and large marshes, surrounding forests where spruce of large diameter can still be found, though a large part of it has been fire killed. The soil is sandy and black loam with gravelly subsoil.—*A. Saint Cyr, D.L.S., 1903.*

Range 6.

Township 28.—This township is rather hilly and somewhat broken and the general quality of the soil is not very good, as it is in many places hard clay or gravelly and not well adapted for cultivation. The surface is open prairie with no timber of any kind growing on it. This will make fuel very scarce, there being no wood growing. There is no trace of coal or lignite to be seen. So fuel for use would have to be got from a distance, as there is no wood growing near the township. The valley of the Saskatchewan is about 6 miles to the west, where some wood could perhaps be obtained. There are no hay marshes or meadows in the township which would make feed somewhat scarce. There are a good many stones in some parts of the township, but no fixed rock is to be seen. Nor is there any trace of minerals. The township being dry there are no streams or springs anywhere on it and consequently no water-power or falls, the present supply being in the ponds or sloughs. From the appearance of the surface, water could be had by digging. The climate would be favourable to cultivation when the soil would admit of it and would also be comparatively free from summer frosts. Game of all kinds is scarce, there being only a few antelope and prairie chicken to be seen. This township is situated about 20 miles from the Prince Albert branch of the Canadian Pacific Railway and from Hanley station, where a market can be had for produce.—*James Warren, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 6.

Township 29.—This township though it has some inferior land may be rated as first class, as the soil is generally good and well adapted for the growing of wheat, other grains and roots. It is favourably situated, being about 20 miles from a thriving little village and railway station, Hanley, which would be an easy market for the settlers, when the grain would be ready for marketing. The surface is undulating and is all open prairie, there being no timber of any kind growing on the township. There are no hay marshes of any extent, so that feed would be rather scarce for wintering stock. There is not much water, being only in small ponds or sloughs, but in a dry season water would be somewhat scarce. I think that by digging water can be had at reasonable depth. There are no streams and consequently no water-powers or falls are to be found. Judging from the surrounding country the climate is good and would not be subject to summer frosts. The grain would ripen early as the soil is dry. Fuel is entirely wanting in the township, as there is no timber and no appearance of coal or lignite in any part of the township. There is no fixed rock of any kind; the only stone being a few scattered stones over the prairie which could be used for building purposes. Neither are there any traces of minerals of any kind. Game is scarce, the only animals we saw were a few antelope and a few prairie chickens. There are no ducks or wild geese, as there are no ponds or lakes. Taking the township as a whole it is one that is well adapted to settlement.—*James Warren, D.L.S., 1903.*

Township 30.—This township is situated about 15 miles southwesterly from Hanley station on the Prince Albert branch of the Canadian Pacific Railway, to which there is a good trail. The general surface is gently undulating, being all open prairie. The soil is well adapted for wheat growing, also oats and other grains and roots as the soil is chiefly clay loam. There is no timber of any kind growing on the township nor any scrub or willow. There is a small hay marsh or meadow on sections 7, 18 and 19 on which some hay has been cut by ranchers for feeding their cattle. This is the only hay meadow on the township. The water generally is good, but there is none but what is found in ponds or the sloughs, there being no running stream of any kind. The climate judging from the surroundings is good and would be comparatively free from summer frosts as the soil is generally dry. Owing to the absence of timber there is no fuel on any part of the township and there are no indications of coal or lignite. There is no fixed rock and only a few stones on the prairie; neither is there any trace of minerals of any kind. Game is very scarce, an occasional antelope or a few prairie chicken being the only game to be seen. Taking this township as a whole, except the southeasterly part, it is well adapted for settlement and would be rated as a first class township and easy of access.—*James Warren, D.L.S., 1903.*

Township 46.—This township can be reached by a good trail from Duck lake to Aldina P. O. The soil is first class, mostly level prairie. in places undulating or slightly rolling. There are some good hay marshes in the northern part and scattered bluffs of poplar. Much of the land is taken up and some small improvements made.—*Walter Beatty, D.L.S., 1903.*

Township 47.—This township is reached by trails from the Indian reserves, is fairly good land with many bluffs of poplar and some spruce of fair quality.—*Walter Beatty, D.L.S., 1903.*

Township 52.—(North outline).—In this range are found many lakes and large marshes separated by low land covered with a light growth of poplar, and scrub growing over bad windfalls. Nearly two-thirds of section 35 lies within the boundaries of a large lake. A belt of spruce covers section 36 and extends southward for a distance of two miles. The soil is a black and sandy loam from seven inches to twelve inches in depth with a clay subsoil.—*A. Saint Cyr, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN.

Range 7.

Township 29.—This is a fairly good township, though some of the soil is somewhat hard, yet in a fairly moist season could be cultivated to advantage. It is fairly well situated for railway and market, as the station Hanley, on the Prince Albert branch, is only about 25 miles away, and there is a good trail for a great part of the way. The surface is gently undulating and is all open prairie, none of it being scrubby or bushy. There is no timber of any kind on the township; all being open prairie. There are no hay marshes anywhere in the township. Water is scarce, the only supply at present being a few ponds in which there is some water, but it is good, there being no trace of alkali. I think that there would not be any trouble in getting a good supply of water by digging. There are no streams on any part of the township, and consequently no water-power. The general indications are that the climate is good, and not more liable to summer frosts than the general surrounding country. The soil being dry would enable the grain crops to ripen early. There is no fuel in the township, as there is no timber, and there are no indications of any coal or lignite to be seen. The supply of fuel would have to come from a great distance. There is no stone, only a few loose stones on the prairie that could be used for building purposes, and there are no indications of minerals of any kind. Game is scarce, as we only saw an occasional antelope and a few prairie chickens. No ducks or wild geese were to be seen, as there are no large ponds or lakes for them to go to. Taking this township as a whole, it is one that is available for settlement. The Saskatchewan is only about 3 or 4 miles from the western boundary of the township, and may yet be used as an outlet for the settlers, and as there are quite a number of fish in the river settlers could take advantage of them.—*James Warren, D.L.S., 1903.*

Township 30.—This township as a whole is a very good one, there not being much second class land in it. The soil is clay or sandy loam of good depth and quality, except in the northern part where it is somewhat light or sandy. The surface is gently undulating, and is all open prairie, there being no timber or scrub on any part of it. There is a good hay meadow or marsh in parts of sections 12, 13 and 24, on which a good quantity of hay has been cut by the ranchers wintering cattle and horses nearby. Water is not abundant, but what is to be found is good, there being no alkali in it. I think that water can be easily obtained by digging a few feet. There are no streams on any part of this township, and consequently there are no water-powers or falls. The climate, judging from the surroundings, is good, and would not be any more subject to summer frosts than the country around. There is no fuel of any kind on the township, as it is entirely prairie, nor are there any traces of coal or lignite. Fuel would have to be got outside of the township. There may be some in the valley of the Saskatchewan, which is only a short distance to the west. There are no stone quarries nor fixed rock of any kind, nor are there any minerals. Game is scarce, there only being an occasional prairie chicken or an antelope to be seen. This township is only about 20 miles from Hanley station on the Prince Albert branch of the Canadian Pacific Railway, which is a lively and growing village, and will no doubt be the market for this and other townships. Taking the township as a whole, it may be rated as a very good one, that is quite available for settling on. The surroundings are favourable in every respect, both for soil and climate.—*James Warren, D.L.S., 1903.*

Township 52.—(North outline.)—East of Big river the country presents quite a different appearance from that on the west. Through section 31 the ground rises by gentle undulations to a plateau extending eastward across the entire range. Most of the timber, which is poplar, has been recently killed by fires, but is still standing. The eastern part of section 33 and a narrow strip of section 34 are covered by Lizard lake, which extends north of the line for many miles. It is a country of marshes and bogs,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 7.

where an unlimited supply of hay can be had. Where the land is high it is covered with bad windfalls. The soil is a black and sandy loam with a clay subsoil.—*A. Saint Cyr, D.L.S., 1903.*

Range 8.

Township 41.—This township is easily reached by a trail from Rosthern to the ferry over the Saskatchewan about twenty-five miles west of that village, thence by trail passing through the southeast part of the township, and going on to the ferry at the elbow or big bend of the river, also to Battleford. The soil is, in most places, a brown loam with sandy subsoil. The township is fairly well adapted for agricultural purposes, excepting a small portion in the southeast part, which is too stony. The surface is fairly level, but in some places slightly rolling. There are a few small lakes in the township, the water of which is slightly alkaline. There are small patches of poplar and willow brush, but very little poplar timber suitable for fuel or fence poles. There are a few small areas of hay land.—*Walter Beatty, D.L.S., 1903.*

Township 42.—This township can be reached from Carlton by the Battleford-Carlton trail, which passes about six and one-half miles east of the southeast corner of the above township. There are no trails within the township and no other way of reaching this township except by making your own trail from the above mentioned well travelled trail. The surface is rolling prairie covered by numerous patches of brush, poplar brush and willows, broken by numerous sloughs, willow sloughs and small lakes. There are two large lakes called Rabbit lake and Redberry lake, the first covering parts of sections 10, 11, 12, 13, 14 and 15; the second covering the greatest part of the northwest quarter of the township. There is no timber of a size large enough to be used for building purposes, it is mostly all brush and willows. There are no hay marshes and the water in the large lakes is alkaline and slightly alkaline in smaller lakes and sloughs. The climate is good with no indications of summer frost. The soil is mostly second class except in the southeast part of the township where it is first class. The wood being brush and poplar, is not of much value for fuel. There is no water-power, no stone quarries and no minerals within this township. There was no game at time of survey. This township may be described as fairly good for agricultural purposes.—*Walter Beatty, D.L.S., 1903.*

Township 43.—This township can be reached by crossing the Saskatchewan at Carlton, then following the Carlton and Fort Pitt trail, which passes at a distance of a quarter of a mile to a mile and a half from the north boundary. This trail is in good condition. The soil is mostly second class and sandy, well suited for grazing purposes, but some good agricultural land is also found, especially in the southeast portion of this township. The surface is broken by numerous sloughs, ponds and small lakes. Redberry lake covers the greatest part of the southwest portion of the township. The timber is in great part poplar, of small size and willow brush, more suitable for fuel than for building. There are no hay marshes and no water-powers. The water in Redberry lake is good, but in sloughs and ponds is slightly alkaline. The climate is good and early summer frost is unknown in this region. There are no stone quarries and no minerals. The timber could be used for fuel and for fencing, but in a very limited way. This township, which is partly covered by a large lake, could accommodate a limited number of settlers and the rest could be used for grazing purposes.—*Walter Beatty, D.L.S., 1903.*

Township 44.—This township can be reached by crossing the Saskatchewan at Carlton and then following the Carlton and Fort Pitt trail which crosses the south portion of the township from east to west. The soil is rated first and second class and consists in the main of a brown loam well suited for agricultural purposes. Some stone and gravel soil is also met in the northwest part of the township which part is

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 8.

also very hilly. This township is occupied by Doukhobors, and large tracts are cultivated. There is a Doukhobor village in sections 35 and 26, and a small mill for crushing grain run by water power on section 27. There are some good hay meadows, especially in sections 24 and 25. There is a large lake called Blaine lake covering parts of sections 11, 12, 13, 14 and 24. The water in this lake is alkaline and of the same quality in the other small lakes and numerous ponds and sloughs. The surface of this township is covered with a great many clumps of poplar and willow brush, but no timber of a size suitable for building purposes is found. There are no stone quarries, no minerals and no game excepting birds. In conclusion I may say that this township is suitable for settlement, except in the northwest portion, which is rather stony and sandy.—*Walter Beatty, D.L.S., 1903.*

Township 45.—This township can be reached by crossing the Saskatchewan at Carlton and then following the north trail from Carlton to Fort Pitt which crosses the south boundary of this township in several places. The soil in this township is a brown sandy loam, but the soil in the western part is very stony and sandy, suitable only for grazing purposes. The surface is rolling except in the southeast and northwest portions where it becomes very hilly and broken. The surface is covered with a thick growth of poplar and willow brush, but no large timber was met except some which is burnt and fallen. The surface is broken by numerous lakes, ponds and sloughs; the water is slightly alkaline in the smaller ones. The water found in creeks in sections 14 and 23 is good and fresh. There is no water-power, no stone quarries, no minerals, and only small game in this township. The climate is good.—*Walter Beatty, D.L.S., 1903.*

Township 52.—(North outline).—Through nearly all of this range the line lies within Indian reserve No. 118. From the northeast corner of township 52, range 9, the country rises gently towards the east for a distance of half a mile, when it again becomes hilly and stony, and is covered with willow scrub and bluffs of small poplar. Part of section 35 and the western half of section 36 are covered by a large bog extending along the western bank of Big river which here flows through a wide valley of hay marshes. Big river crosses the base line at a point five chains west of the quarter section on north of section 36. The eastern boundary of the Indian reserve intersects the line at a point eleven and seventy-six hundredths chains east of the quarter section on the north of section 36. A short distance east of this boundary is a road leading to Stony lake, a district also included in the reservation. From the many large hay marshes in the vicinity of Big river the Indians procure the necessary fodder for their horses during the winter season. At a point ten chains west of the quarter section post on the north boundary of section 33, the wagon road from Carlton to Green lake crosses the line while three-quarters of a mile farther east a branch road, better travelled than the main trail, crosses the north boundary of section 34. The soil is a sandy or black loam with a subsoil of clay and stones or gravel.—*A. Saint Cyr, D.L.S., 1903.*

Range 9.

Township 41.—This township can be reached by a good trail from Saskatoon to the ferry over the Saskatchewan at the big bend, thence by a good trail made by settlers and land hunters into the township. The soil is good and well adapted to agricultural purposes. The water in ponds and sloughs is slightly alkaline. There are no large hay meadows but many of small area. There are no streams or water-powers in the township. The surface is slightly rolling with small patches of poplar and willow brush, the greater part of the township being open prairie. There is no building timber and very little poplar suitable for fencing. There are no stone quarries or minerals in the township.—*Walter Beatty, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 9.

Township 42.—This township can be reached from Carlton by the Battleford and Carlton trail which passes about twelve and one-half miles from the southeast corner of the township or by crossing the Saskatchewan at Carlton and following the Fort Pitt and Carlton trail which passes on the north side of Redberry lake in township 43, range 9, and thence across country to township 42. This last trail is about six miles from the north boundary of township 42. The soil is for the greater part second class except in section 4, where it is first class; it is fairly good agricultural land. The surface is covered with numerous patches of poplar, willows, poplar brush, broken by sloughs, ponds and small lakes. Some large poplar 10 inches in diameter was crossed in section 32, and in a gully in section 29 some fairly large poplar was also crossed. The northeast portion of this township is fairly well covered with small poplar suitable for fuel and fencing. There are no hay marshes, the water in Redberry lake is alkaline but in the large creek flowing into the southwest part of the lake the water is fairly good. A good water-power could be developed from this creek, if properly dammed. The climate is good with no indication of summer frost. There are no stone quarries and no minerals in this township. Only small game was seen at time of survey.—*Walter Beatty, D.L.S., 1903.*

Township 43.—This township can be reached by crossing the Saskatchewan at Carlton, then following the Carlton and Fort Pitt trail, which enters the township in the north boundary of section 36 and crosses the northwest part of the township. The soil is sandy and in places stony. The surface is rolling, and broken by numerous lakes, ponds and sloughs; the land is covered by numerous patches of poplar and willow brush, with a few clumps of heavy timber suitable for building purposes. There are also a few small patches of hay. The water in Redberry lake is good and fresh, but in the smaller lakes and sloughs is slightly alkaline. There is no water-power nor stone quarries nor minerals, and only small game was seen at the time of survey. This township is well suited for grazing purposes, but it is too sandy for agricultural purposes.—*Walter Beatty, D.L.S., 1903.*

Township 44.—This township can be reached from Carlton by the Carlton and Fort Pitt trail after crossing the Saskatchewan at Carlton. This trail crosses the township near the southeast corner. The soil is very sandy and stony in places of second and third class. The surface is rolling, broken by numerous ponds, sloughs and lakes. The country is covered with numerous clumps of poplar brush and dead poplar. The timber in all cases is of small size and would be useful only for fuel and fencing purposes. The water in the larger lakes is good and fresh, but in the sloughs and small lakes and ponds it is slightly alkaline. There are no water-powers, no stone quarries and no minerals. Only small game was seen at time of survey. This township is well suited for grazing, but too sandy for agricultural purposes. The climate is good.—*Walter Beatty, D.L.S., 1903.*

Township 45.—This township can be reached by a good trail from Duck lake, which passes across the township, entering on the east side in section 1, bearing northwest and crossing section 18 on the west side of the township. The soil is generally light, and in many parts stony and not suitable for agricultural purposes. There are several lakes in the township, the waters of which are slightly alkaline, but the water in a stream 20 links wide which passes through the township on the eastern side from north to south is fresh. The greater part of the township is covered with poplar brush and brush. The surface is rolling throughout, with several high hills. There are no water-powers or minerals in the township, and I saw no game excepting birds.—*David Beatty, D.L.S., 1903.*

Township 52.—(North outline.)—Across most of this range the country is very hilly and stony, and is broken by numerous lakes, large tamarack swamps and bogs. Nearly all of section 32 is covered by a lake, which is surrounded by extensive bogs. West of Bog river, which crosses the base line at a point 35 chains east of the north-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 9.

east corner of section 35, the country is hilly. The river here has a width of about one chain, and on October 3 had an average depth of about 8 feet. The current is swift, and is often impeded by boulders. The hills on the western side rise to a height of 125 feet, often with a steep ascent from the water's edge. On the east of the river the country is level prairie. The western boundary of the Indian reserve No. 118 intersects the base line at a point eleven and twenty-one hundredths chains east of the northeast corner of section 35. The timber is tamarack, 10 inches in diameter, with poplar and scrub. The soil is a black or sandy loam to a depth of four to six inches, with a sub-soil of clay and stones.—*A. Saint-Cyr, D.L.S., 1903.*

Range 10.

Township 35.—From Saskatoon this township is reached by a trail running due west from that place for 14 miles, thence southwesterly to the line between townships 35 and 36, which it follows to the line between ranges 9 and 10. The soil is chiefly a sandy loam or sandy clay overlying sand and at a considerable depth, clay making it eminently adapted for the growing of all kinds of heavy cereals. The whole surface is open prairie, rolling or undulating, excepting where cut by Eaglehills creek. Scrub is met with in the valley of that creek, but of timber there is none of any size. A few small stunted ash and poplar are found near the water, but they are not fit either for building or fuel. From the appearance of the old grass on the prairie, I do not think that it is suitable for hay, and as the township is very dry, there are no hay marshes. The water in the sloughs is as a rule fresh and sweet. In Eaglehills creek it is slightly alkaline, which can also be said of the creek in the northwest corner of the township, and I am informed that in dry seasons both are liable to be dry. At present writing (May) Eaglehills creek is falling at the rate of two inches per day. This creek has a deep cut bed and is not liable to overflow, nor is the creek to the northwest liable to flood any land in this township. There are no water-powers, and I do not think any could be obtained by building dams without overflowing large areas. In the month of May during the time of the survey we had ice on pails, &c., at night, and 80 degrees in the shade in day-time. It is too early in the season to reckon on summer frosts. There is no timber for fuel, and I have not heard of coal or lignite in this locality. No stone quarries nor minerals were noticed. Antelope, ducks, geese and prairie chickens were seen, the latter very numerous. Some pike are found in Eaglehills creek. At the present time the township is overrun with homestead seekers and land speculators. One of the former is building on section 2, but was not at home at the time of the survey.—*H. B. Proudfoot, D.L.S., 1903.*

Township 36.—From Saskatoon this township is reached by a trail running due west for 14 miles, thence southeasterly to the line between townships 35 and 36, which it follows to the line between ranges 9 and 10. The soil is chiefly sandy loam or sandy clay, overlying sand, and at a considerable depth clay, which makes it eminently adapted for the growing of all kinds of hardy cereals. The whole surface is rolling prairie, excepting where cut by Eaglehills creek. Scrub willow, &c., and in some places ash, are met with in the valley of the creek, but there is no timber of any size. In the northwest quarter of the township a few bluffs of small poplar occur, but the timber seems to die before reaching any size. From the appearance of the old grass on the prairie, it is altogether too short and too thin for hay, and as the township is very dry, there are very few sloughs where hay might be cut. The water in the sloughs is, as a rule, fresh, but in Eaglehills creek it is slightly alkaline, which can also be said of the creek flowing into Eaglehills creek in the southwest corner of the township, and I am informed that in dry seasons both creeks are inclined to be dry. At present writing Eaglehills creek is falling at the rate of two inches per day. This creek has a deep-cut bed, and it is not liable to overflow, nor is the creek in the south-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 10.

west liable to flood any land in this township. By the construction of large dams in the lower reaches of Eaglehills creek in township 36, range 10, water-power might be obtained, but a more complete record of the flow of water in all seasons would be necessary to obtain reliable information. In May, during the time of survey, we had ice on pails of water at night and 80° in the shade in the day-time, but it is too early in the season to reckon on summer frosts. There is very little timber for fuel, and I have not heard of coal or lignite in this locality. No stone quarries were noticed and no minerals. Game consists of antelope, duck, geese, prairie chickens, the latter very numerous, and some pike are found in Eaglehills creek. At the present time the township is overrun with homestead seekers and land speculators, although no permanent improvements have been made. I have noticed some scratching done with ploughs at various places.—*H. B. Proudfoot, D.L.S., 1903.*

Township 41.—This township can be reached conveniently from Saskatoon by following a good trail westward about 26 miles to the ferry across the Saskatchewan at the big bend, thence by a good trail northerly and westerly, made by settlers and land-hunters into and across the township. The soil is generally a sandy loam, and in places a rich black loam with sand and clay subsoil, suited for agricultural purposes. The surface is generally rolling, but without any hills, and is prairie with numerous patches of poplar and willow brush scattered throughout. The largest timber is not more than eight inches in diameter, and is in small scattered clumps, but is suitable only for fencing and fuel. There are numerous small areas of hay land. The water in the ponds and sloughs is slightly alkaline. There is only one good-sized lake in the township occupying parts of sections 5 and 6, but the greater part of this lake is in the township adjoining to the south. Its water is slightly alkaline. There are no creeks, no water-powers, no minerals or stone quarries, and only small game. There were no summer frosts. There are several settlers in the township.—*David Beatty, D.L.S., 1903.*

Township 42.—This township can be reached by crossing Saskatchewan river at Carlton, and thence following the Carlton and Fort Pitt trail which passes about one mile from the northwest corner of the township. The soil is mostly third class and a small quantity of second class, but very sandy. The surface is rolling prairie, sand hills, and some patches of open prairie, with numerous clumps of small poplar brush, stunted poplar and willows, and is broken by numerous sloughs, ponds and small lakes. There is a large creek of fresh water, with banks thirty feet high, flowing into Red-berry lake, situated in the northwestern portion of this township. The poplar in this township is too small to be of any use for building purposes, but would be useful for fencing and fuel. There is no water-power, stone quarries or minerals. Only small game was seen during time of survey. The climate is good. In conclusion, this township can be described as more suitable for grazing purposes than for farming.—*David Beatty, D.L.S., 1903.*

Township 43.—This township can easily be reached from Rosthern by a good trail through a well settled country almost due west about 25 miles to a ferry across the Saskatchewan river, thence by a good trail northerly about 13 miles to the intersection of the Carlton and Battleford trail, thence westerly along said last mentioned trail which passes through township 42, range 10, about three miles south of this township. The soil in the western part or half of the township is fairly good, the greater part being a brown loam with clay subsoil, but in some places light and sandy. It is fairly well suited for agricultural purposes. The eastern half of the township is a lighter soil and in many places gravelly and is not good farming land. The surface is rolling with considerable brush and patches of small poplar suitable for fuel but very little large enough for building purposes. There are no extensive hay meadows but quite a few small areas scattered throughout. The water is fairly good but in places alkaline.

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 10.

We had no summer frosts. There are no stone quarries, no minerals and no water-powers. We saw no game except ducks and chickens, which were numerous.—*David Beatty, D.L.S., 1903.*

Township 44.—This township can be reached by crossing the Saskatchewan at Carlton and thence following the trail from Carlton to Fort Pitt, which passes about $2\frac{1}{2}$ miles south of the southeast corner of the township. The soil is first and second class with some parts rather stony, but the greatest part well suited for agricultural purposes. The surface is rolling, covered with numerous patches of brush, willows and poplar brush, quite thick in some places. The surface is broken by numerous sloughs, ponds and small lakes. Section 1 contains a portion of Meadow lake which contains water of good quality. The water in sloughs and small lakes is slightly alkaline. There is a small quantity of fallen timber which may be useful for fuel. There is no hay, no water-power, no stone quarries and no minerals in this township. Small game only was seen during time of survey.—*David Beatty, D.L.S., 1903.*

Township 45.—This township can be reached by crossing Saskatchewan river at Carlton and then following the north trail from Carlton to Fort Pitt, which crosses this township in the north part from east to west. The soil is a brown and sandy loam, rather stony in places but on the whole fairly good for agricultural or grazing purposes. The surface is generally rolling or undulating prairie except the eastern part which is more or less broken and hilly. The surface is covered by numerous patches of poplar and willow brush broken by sloughs, ponds, good hay marshes and grassy slopes. The timber is suitable for fuel only. There is a large hay marsh in section 30. Gordon lake covering parts of sections 22, 23, 14 and 15 contains good fresh water; the other small lakes and ponds being slightly alkaline. There is no water-power, no stone quarries, no minerals and only small game in the township. The climate is good.—*David Beatty, D.L.S., 1903.*

Township 47.—The soil in this township is all first class, being for the most part a black loam with sandy loam or clay subsoil; it would be a good grain-growing township, but the greater part of it is covered with bush. The southern part of it, however, has very little bush, being mostly covered with a growth of thick willow scrub, but as it has been killed with fires the last few years, it will soon die out. The timber in this township is in the four northern rows of sections; it is principally poplar and an average diameter of about 7 inches. There are also quite a number of spruce. There is no hay of any account in this township, but it is plentiful a few miles to the south. There are two or three creeks running in a southeasterly direction in the south part of the township, and all the water found in the sloughs and creeks is of a first class quality. There is a good supply of wood all over the township. There are no stones to be found, except a few surface stones in the southwestern corner. There are no minerals of any kind. Prairie chicken and jumping-deer are the only kind of game. There is a good trail known as the Jackfish trail, about six miles to the south, a branch of which runs through the southwestern corner.—*John Molloy, D.L.S., 1903.*

Township 52.—(North outline.)—This range intersects the Thickwood hills, which in places are heavily timbered with thick bluffs of poplar, four inches in diameter. The surface of the country is very stony, and broken by a great many lakes, ponds, hay marshes and tamarack bogs, these being caused by beaver dams, which are found in every direction, and without which we would have experienced great difficulty in proceeding with the survey. All the streams flow northward. No trails were noticed. In sections 31, 32 and 35 the soil is a sandy loam from five to eight inches in depth, with a subsoil of sand and clay. In sections 33, 34 and 36 the soil is a black loam, varying in depth from four to six inches, with a clay subsoil. Thick windfalls cover the ground.—*A. Saint-Cyr, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN.

Range 11.

Township 35.—The route to this township is by the ordinary trails from Saskatoon. The country is a rolling prairie, with a surface soil of sandy loam and a subsoil of clay. There is no timber of any kind to be found. Small quantities of hay may be cut around every slough, but there are no big marshes. The water in all the sloughs is fresh. The creek or brook on the east side of the township runs dry early in the year. No water-power exists in the township. We had one frost in May. There is no fuel whatever. No minerals or rock exposures were noticed. Ducks and prairie chickens are found.—*H. B. Proudfoot, D.L.S., 1903.*

Township 36.—This township is reached from Saskatoon by the trail running due west about 14 miles therefrom, and thence northwest to the north boundary of township 35 and along that line to the southeast corner of this township. The soil is principally black or sandy loam from 6 to 18 inches in depth, with a clay and sand subsoil, and always clay at considerable depth, making a good grain-raising district. The surface is all open-rolling prairie; no timber or scrub was met with. A few small poplar occur in bunches on the edge of the lake. No hay swamps were seen. Water in the small sloughs is fresh and sweet, but alkaline in the large lake and the creek. The creek is not of sufficient volume to afford water-power. There is no fuel of any kind. No stone quarries or minerals were discovered. Antelope, geese, ducks and prairie chickens were seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 41.—This township is easily reached by a good trail from Saskatoon to the ferry at the big bend on the Saskatchewan. From said ferry there is a very good trail made recently by the land hunters and settlers going into this and adjoining townships. There are a few settlers in the southern part of the township. The greater part of this township is good farming land, with patches of poplar and willow brush scattered throughout. There is considerable poplar timber suitable for fencing and fuel in the northeast part. Nearly every section has small areas of hay land. There are a few small lakes in the township. The water is fairly good, but slightly alkaline.—*David Beatty, D.L.S., 1903.*

Township 42.—This township can be reached from Carlton, crossing the Saskatchewan at that point, and following the Carlton and Fort Pitt trail, which passes close to the northwest corner of the township. The soil is first and second class, with some third, and is well adapted for agricultural purposes. The surface is in great part rolling prairie, with small portions of level open prairie covered with patches of poplar and willow brush, broken by a few marshes, sloughs and ponds or small lakes. The water is a little alkaline in the sloughs, but generally good and fresh in lakes and ponds, and is found in sufficient quantity all through this township for the wants of settlers. There is no water-power, no stone quarries, no minerals, and only small game in this township. Poplar large enough for fencing purposes can be found in a gully 50 feet deep in the western part of section 22, but the best of the timber would only be suitable for fuel. A small quantity of hay could be taken from the marshes. In conclusion, I may say that this township is well adapted for settlement.—*David Beatty, D.L.S., 1903.*

Township 43.—This township can be reached from Carlton by crossing the Saskatchewan at that point and then following the trail from Carlton to Fort Pitt, which crosses the south part of the township. The soil is first class, brown loam with clay subsoil. The surface is rolling and undulating prairie with some level portions. There are some scattered clumps of poplar and willow brush, but no heavy timber. There is a fairly good supply of water from the few ponds and sloughs, in the latter the water is slightly alkaline. There is a little hay, no water powers, no minerals and a very limited quantity of wood for fuel. There were a few antelope seen. This

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 11.

township is well suited for agricultural purposes. The climate is good.—*David Beatty, D.L.S., 1903.*

Township 44.—This township can be reached by crossing Saskatchewan river at Carlton, and then following the Carlton and Fort Pitt trail, which passes about 5 miles south of the south boundary of the township. The soil is a good black and brown loam of first quality, suitable for agricultural purposes. The surface is rolling and some parts level prairie covered with numerous patches of poplar and willow brush, broken by two small lakes in sections 23 and 24 and a few small sloughs and ponds. There is no hay, no water-power and very little timber suitable even for fuel. There are no stone quarries, no minerals and only small game. The climate is good. The township is well suited for agricultural purposes.—*David Beatty, D.L.S., 1903.*

Township 45.—This township is rolling prairie with bluffs of small poplar and willow. There are quite a number of fresh water lakes and sloughs. The soil is a black loam averaging about 8 inches in depth; the subsoil is red clay. There is considerable stone on the ridges throughout the township, but the stones are all on the surface. There is sufficient wood in the bluffs for fuel and fencing. Suitable timber for building purposes is scarce. There is any amount of hay in the meadows. This part appears to be free from summer frosts. There is a good trail running through the northern tier of sections to Duck Lake, a station on the Prince Albert branch of the Canadian Pacific Railway. There are no streams or water powers in this township. Small game such as ducks, geese and prairie chicken are plentiful. I did not see any large game. There are no minerals or stone quarries in this township.—*W. J. Deans, D.L.S., 1903.*

Township 46.—This township is rolling prairie with considerable willow and poplar scrub. There are a number of hay meadows in the southerly part and numerous ponds and lakes of fresh water in the northerly part. The soil generally is black loam averaging 8 inches in depth. The subsoil is clay. This township is well adapted for mixed farming. There is sufficient wood in this township for fuel and fencing, but none for building purposes. There is only one small stream about 6 links wide which runs into Island lake. There are no water powers or minerals of any kind. Small game such as prairie chicken and duck are plentiful. This part of the country appears to be very dry and is free from summer frosts. There is a good trail from Duck lake station to the southerly part of the township. There are no settlers in the township at present.—*W. J. Deans, D.L.S., 1903.*

Township 52.—(North outline.)—The surface continues level across this range, but with the exception of section 31, which is marshy, the country is drier and better suited for agricultural purposes, being drained by a river one chain wide and six feet deep, with a stony bottom, which flows out of a large lake and crosses the base line at a point 55 chains east of the northeast corner of section 32. The surface is covered with a light growth of poplar, and a few scattered clumps of spruce and scrub willow. West of the river the country is level, and poplar and spruce 10 inches in diameter occur in bluffs or in narrow belts. Section 36 is stony and the surface rolling and much broken by deep ravines. An old cart trail coming from the south intersects the base line near the northeast corner of section 32 and joins the Carlton and Green lake trail a few miles farther north. The soil is a black loam from 6 to 14 inches deep on a subsoil of clay or clay and stones.—*A. Saint Cyr, D.L.S., 1903.*

Range 12.

Township 35.—The method of reaching this township is either by the trail running west from Saskatoon or by trail from the elbow of the Saskatchewan, which crosses the 9th correction line about 1 mile east of the southeast corner of the township. The soil in the southeastern part is principally clay loam on a clay subsoil and is excellent

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 12.

farming land where not spoiled by alkali. In the northwesterly part of the township the soil is more of a sandy nature and stony on the hills. The surface of the country is all open prairie. The north and part of the east boundaries are in the Eaglehills, but the rest is undulating or rolling prairie with no timber of any kind. There are some large alkaline sloughs and numerous small fresh water ponds, but no rivers or brooks. The first week of June, 1903, had hot days and cool nights, with high winds, but no frosts during that time. There is no fuel available in the township. No stone quarries or minerals were noticed. The game consists of antelope, ducks and prairie chickens.—*H. B. Proudfoot, D.L.S., 1903.*

Township 36.—A good trail from Telegraph coulee runs across this township, and I think is the best way of reaching it. The soil is generally black or sandy loam, with sometimes sand, but mostly clay subsoil. The township is better adapted, on account of the roughness of the surface, for grazing than grain growing, good grass being found in the valleys of the Eaglehills. The surface is all open prairie and being in the Eaglehills is very rough and hilly, the tops of the ridges and knolls are very stony, but few stones are met with in the valley. Considerable quantities of hay may be cut along the creek and around some of the lakes, but no large hay meadows were found. Three lakes of considerable size occur in the township, mostly alkaline, but no water-power is available in the creek joining them, on account of the small flow and no fall. No area of any extent would be affected by high water. In the last week of May, 1903, we had hot days and cold nights, with high winds but no frosts. There is no fuel, stone quarries or minerals in the township. Antelope, duck, geese and prairie chicken are plentiful.—*H. B. Proudfoot, D.L.S., 1903.*

Township 37.—A trail running westerly from Saskatoon passes through township 36, range 12 about 2 miles south of this township, affording the easiest way of reaching it. East of the Eaglehills the soil is a black loam or clay loam, with a clay subsoil, a good grain district. In the Eaglehills the soil is light, and on the tops of the ridges stony; but as there is excellent grass in the valleys it will prove a good grazing country. The surface is all open prairie, no timber being met with except a few small bunches of poplar around lakes 1 and 3. Hay can be cut around the sloughs, but no large marshes were seen. There is very little running water. The water in the small sloughs was fresh, but in lake No. 3 very alkaline. No water-power is available. In July it was very hot in daytime, with cool nights; no frosts were recorded. There is no fuel in any quantity nearer than township 38, range 13. There are no minerals or exposed rock. Antelope, ducks, chickens and partridge were fairly numerous.—*H. B. Proudfoot, D.L.S., 1903.*

Township 38.—An old trail, a branch of the Saskatoon and Battleford trail, passes through this township, being rather old, but in fairly good condition. The soil is black and clay loam, with clay subsoil, rather sandy towards the westerly boundary, but suitable for grain-growing. There are a few alkaline flats which are good for nothing. The surface is rolling prairie. There is no timber. Good hay can be found around most of the sloughs and lakes, but the prairie grass is short and thin. Water in the large lakes is very alkaline, but good in the small ones and in sloughs. A creek of small size crosses the township, but there is not enough water or fall to afford power. The climate is good; no frosts were recorded during the time of survey (July). Plenty of wood can be got for fuel in township 38, range 13, but there is none in this township. There are no stone quarries or minerals. Ducks and chicken were noticed.—*H. B. Proudfoot, D.L.S., 1903.*

Township 42.—This township is well suited for farming, although the soil is not quite as heavy as is desirable for wheat-raising, being of a light sandy nature, with mostly a clay subsoil. The greater part of the township is mostly level or undulating prairie, partly covered with thick willow scrub, which is evenly distributed over the township. There is no timber of any account. There are very few hay meadows in

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 12.

the township, although it is well covered with a good growth of grass, which makes excellent pasture. There are no streams of any kind in this township, but there are quite a number of sloughs which supply water during the summer season, although not of a first class quality for domestic purposes. Good water can be had by digging from twenty to thirty feet. There is no timber that would do for fuel, but poplar can be had about twelve miles south, and spruce, tamarack and poplar about thirty miles north. There is enough surface stone in this township to supply settlers for building purposes, but which will in no way interfere with the cultivation of the land. There are no minerals in this township. The only kind of game found is prairie chicken, wild ducks, and a few jumping deer. The climate of this district is rather mild, resembling the climate of Manitoba, except that there are not the severe blizzards which are so common in Manitoba. There are no summer frosts. The township is easy of access. There is a good trail from Saskatoon, which enters it in section 6 and traverses it in a northwesterly direction, leaving the township in section 32. The Fort Pitt and Carlton trail also runs along the north boundary of the township.—*John Molloy, D.L.S., 1903.*

Township 43.—This township is very well situated for farming, although the northern part of it is somewhat hilly. The soil is mostly a black loam with a clay subsoil, but in some places it is a sandy loam. It produces excellent grass for pasture, but on account of the scarcity of hay meadows it will not be very suitable for ranching, there being only two or three hay meadows in the whole township; they are situated in the southern part. The greater part of this township is heavy, rolling or hilly prairie, with no timber and very little scrub, except on the edges of the sloughs. There are one or two small creeks in this township having excellent water. There is a lake in part of the north boundaries of sections 32 and 33. The water is of a very good quality. There is another large body of water in the southwest corner of the township, but as it is not permanent, it could not be termed a lake; the water is unfit for use, being alkaline. In dry seasons this marsh would produce an immense amount of hay. There are no stones of any account in this township, and no minerals of any kind. The only kind of game found is the prairie chicken and wild ducks. The climate is moderate, resembling that of Manitoba, with the exception that blizzards are less frequent and less severe and less strong winds in summer. There are no summer frosts. The Fort Pitt and Carlton trail crosses this township in the northern half. It is an excellent trail, as it has been well travelled the past few seasons.—*John Molloy, D.L.S., 1903.*

Township 44.—This township is very suitable for either farming or ranching, particularly farming, as the soil is mostly a deep black loam with a good clay subsoil, but in the northwest corner and part of the southern portion it is inclined to be hilly. In these portions the soil is a sandy loam with clay subsoil. All the remainder of the township is gently rolling, with an occasional hill. There is scarcely any timber, but there is considerable willow and poplar scrub, especially around the sloughs, of which there are quite a number. There are, however, a few poplar bluffs in the northwestern part of the township; there is not enough for fuel, but this can be obtained in large quantities about 20 miles to the north. There is very little hay of any account in this township, but in dry seasons it can be obtained in the sloughs where there is water at present. The water supply in this township is fairly good, there being quite a number of fresh water sloughs scattered throughout and quite a large lake in the southwestern portion. There are also two or three small creeks, but they only contain water for a part of the season. Enough stones for building purposes can be obtained in the hilly portions of the township for a few years. There are no minerals of any kind to be found. The only kind of game is the prairie chicken and wild ducks. The Jackfish and Carlton trail, which is an excellent one, passes about six miles to the north and the Fort Pitt and Carlton trail passes about six miles to the south.—*John Molloy, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 12.

Township 45.—This township is mostly level prairie. In the northerly part there are a few bluffs of small poplar suitable for fencing and fuel. I did not see any timber suitable for building purposes. The soil is a black loam averaging 6 inches in depth; the subsoil is clay. There is a small stream from 15 to 30 links in width running westerly through the northerly part of this township. There are numerous fresh water lakes and ponds in the western part of the township, but there do not appear to be many hay meadows. The township is bounded on the west by a range of hills from 80 to 125 feet in height. The township is well adapted for farming purposes; grain of all the usual kinds does well. There are no summer frosts in this part. There are no water-powers nor minerals of any kind in the township. Prairie chickens and ducks are plentiful. A trail from Duck Lake station runs through the township. There was one settler in this township when I was subdividing; he was engaged in raising cattle and had a few acres in wheat which looked well.—*W. J. Deans, D.L.S., 1903.*

Township 46.—This township is mostly level prairie except the northeasterly part which is rolling. The surface in places is covered with small poplar and willows, but the township generally is open prairie. There are a few hay meadows scattered throughout the township which yield a large amount of hay. The soil generally is a black loam from 2 to 12 inches deep, the subsoil is clay. The land in spots is stony but not enough to prevent cultivation and the production of good grain crops. There are a few small streams throughout the township which dry up in the summer. There is not enough timber for fuel or fencing in this township and none large enough for building purposes. There are no water-powers nor minerals of any kind in the township. Small game is plentiful, also small fruit. There are a number of lakes and ponds, generally small, scattered throughout the northerly part of the township. The land throughout the township, generally speaking, is good and well adapted for farming purposes. This part of the country appears to be free from summer frosts. There is a good trail from Duck Lake station to this township.—*W. J. Deans, D.L.S., 1903.*

Township 47.—(East outline.)—Section 36 contains quite a large lake; the east boundary passes through a spruce bluff, the trees average 8 inches in diameter. Sections 25, 24, 13, 12 and 1 are covered with a thick growth of willows and small poplar. There are numerous small ponds and sloughs all along the east boundary of this township. The soil is first and second classes.—*W. J. Deans, D.L.S., 1903.*

(Subdivision.)—The route followed to this township was from Rosthern, on the Prince Albert branch of the Canadian Pacific Railway, westerly crossing the Saskatchewan river at the Doukhobor ferry, then northwesterly to the southeast corner of township 45, range 13, west of the third meridian and northerly through townships 45 and 46. The soil in the township is a clay loam about six inches deep, with clay subsoil, and is suitable for grain growing or ranching. The surface is rolling prairie alternating with clumps of poplar timber and poplar and willow brush in nearly equal proportions. The timber is poplar, and is from two to eight inches in diameter, and is scattered more or less over nearly the whole of the township. There are very few hay meadows, but good long grass grows everywhere in the township. The water in the creeks, of which there are several, is fresh. The water in the lakes and ponds is alkaline. The creeks are small, only 10 or 15 links wide and about three feet deep. I think the water in them is permanent. The land is not liable to be flooded. There is no water-power. The climate is mild in summer. The first frost occurred the night of September 1. There is sufficient poplar timber for fuel nearly everywhere in the township. There are no coal or lignite veins in the township and no stone quarries or minerals of economic value. The only game I saw was ducks, geese and prairie chickens. There are no settlers in the township.—*J. J. McKenna, D.L.S., 1903.*

Township 48.—(East outline.)—The east boundary of section 36 for 64 chains runs through thick poplar averaging six inches in diameter. At 64 chains the north shore of Meeting lake intersects the line. This lake is some three miles long and from one

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 12.

to two in width. The water is fresh and abounds with jackfish and pickerel. The shore of the lake is generally stony and a few feet higher than the water. The line south of Meeting lake runs through a country covered with a thick growth of willows, and in section 24 poplar about six inches in diameter. There is some spruce in section 25 near the lake shore, but it is small. Sections 13, 12 and 1 are covered with a thick growth of willows and small poplar. The soil is first and second class.—*W. J. Deans, D.L.S., 1903.*

(Subdivision.)—This is a first class farming or ranching township. The soil is a deep black loam with a clay subsoil, the surface being undulating or gently rolling, covered mostly with willow scrub (the greater part of which has been killed by recent fires), and a good number of poplar bluffs. There is also a good supply of spruce toward the northern part of the township, especially in sections 30, 31 and 32. There is no hay to be found in the township, but there is considerable a few miles to the south. All the water in the creeks and Meeting lake is of a first class quality. There is a good supply of wood to be found all over the township, and all the country to the north appears to be heavily timbered with spruce and poplar. There are no stones or minerals of any kind to be found. The prairie chicken and jumping deer are the only kind of game to be found. A few fish can be found in Meeting lake, which covers the greater part of sections 25, 26, 34, 35 and 36. A branch of the Jackfish trail, which runs to Carlton and Duck lake, passes through the southern part of the township.—*John Molloy, D.L.S., 1903.*

Township 52.—(North outline.)—Across this range the country is level, much of it being hay land or covered with thick willow. Where the nature of the land permits, or where slight elevations occur, it is timbered with poplar, eight inches in diameter, birch and large alder. The country is dotted with small ponds and tamarack swamps. The eastern half of section 31 and nearly all of section 32 lie in a marsh one-half a mile wide and extending southward nearly three miles. Another large marsh covers the western half of section 35. In sections 31, 32, 33 and 34, the soil on the high land is black loam, six inches to fourteen inches in depth, with a clay subsoil. In sections 35 and 36 is found a black mould and sandy soil to a depth of six inches with a subsoil of clay and sand.—*A. Saint Cyr, D.L.S., 1903.*

Range 13.

Township 35.—A trail from Telegraph coulee which connects with the Battleford-Saskatoon trail, crosses the northeast corner of the township, making a convenient way for reaching it. The soil is a black or clay loam on a subsoil of clay or sand, and where not too hilly it is a good grain raising locality. A spur of the Eaglehills crosses the northwestern portion and breaks the surface considerably with high stony ridges. The remainder of the township is high rolling prairie. No timber of any kind was found. Hay is very scarce and the grass thin and weak. A saline lake of considerable size lies in sections 19, 20, 29 and 30 with springs around the shores, but otherwise water is very scarce; none running and very few sloughs. Last week in July, 1903, was very wet, rain every day and cold, but no frosts. There is no fuel whatever. No stone quarries or minerals were noticed. A few antelope, ducks, geese and prairie chickens were seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 36.—The trail from Telegraph coulee on the Saskatchewan passes through this township and is the easiest way of reaching this part of the country. The soil is generally light and very stony. A spur of the Eaglehills passes through the westerly part of the township rendering the surface very rough and broken and unfitting it for grain raising, but as excellent grass and water occur in the different valleys, stock raising could be followed advantageously. The surface is all open prairie, a few small scattered bluffs of small poplar and willow being all the timber

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 13.

met with and that is not suitable for either fencing or fuel. No hay marshes were found. One lake, very salty, but of considerable size, was surveyed, while the whole township is dotted with small fresh water ponds and sloughs. No running water was encountered. There was good warm weather, but cold nights in the beginning of June. There is no fuel available. No stone quarries or minerals were noticed. Antelope, ducks, chickens and a few geese are to be found.—*H. B. Proudfoot, D.L.S., 1903.*

Township 37.—A trail from Saskatoon to Battleford passes through township 38, range 13, about 2 miles north of the northeast angle of this township. With the exception of a short season when the water is high in Eaglehills creek in the spring, this trail is in very good condition and affords the most convenient route for reaching this township. The soil is a black or sand loam alluvial deposit, overlying a clay subsoil. On account of the nature of the surface—high rolling prairie, with numerous small sloughs and ponds—this township is more adapted for grazing than grain growing. The surface is open prairie, with a few bluffs of small poplar, &c., near the southeast corner. Hay can be cut around all the sloughs and ponds. In a good many locations prairie wool can be harvested, which makes excellent winter feed for horses. No large hay marshes were seen. The water in the sloughs and ponds is fresh; only one small brook of running water was met with. The climate in June was warm and fine, with cool nights but no frosts. Good wood for fuel can be obtained in the northern part of township 38, range 13, but there is no quantity of it in township 37, range 13. There are no stone quarries or minerals. Numerous ducks and prairie chickens were seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 38.—The south trail from Saskatoon to Battleford crosses this township diagonally, and although not much used it is in good condition and affords a convenient way of entering this township. The soil is black and sandy loam, with as a rule, a clay subsoil. The surface is very much broken, with small steep hills interspersed with numerous ponds and sloughs. The southwesterly half of the township is prairie, ponds and sloughs having willow margins. The northeasterly part is mostly covered with bluffs of poplar and willow, with solid bush in some places in the northeasterly four sections. Most of the bush, however, has been burned, and very little timber suitable for building is now green. Plenty of fencing timber is to be had; the large timber is all poplar. Hay has been cut in large quantities in years gone by, as evidenced by the old hay fences and fire breaks, but the height of the water in the sloughs and flats has drowned all the best hay land. All the water tested in the lakes and sloughs is fresh; ponds are numerous and some large lakes were surveyed. A creek about 15 links in width flows easterly out of the large lake in the northerly part of the township, but where noticed does not afford water or facilities for power. At the beginning of July rain fell at times every day, with mostly thunderstorms, no frosts were observed, but weather was cool. Plenty of dry and green poplar is found in the northeasterly part of the township, but no coal. There are no minerals or stone quarries. A few antelope were seen. Ducks are numerous, also prairie chickens.—*H. B. Proudfoot, D.L.S., 1903.*

Township 43.—This township is first class for farming. The soil is mostly a black loam with a sandy loam or clay subsoil. The northern half of sections 34, 35 and 36 is somewhat hilly and there is a large marsh in the southwestern corner; with these exceptions, the remainder of the township is all first class for grain growing purposes. With the exception of some poplar growing along the shores of a lake, which is situated in parts of sections 17, 18, 19 and 20, there is no timber of any account. There are a few scattered willows growing around the sloughs. There is little or no hay in this township, unless in very dry seasons; when the marsh in the southeastern portion of the township becomes dry it will produce immense quantities of hay. There are no creeks in this township, but there are quite a number of sloughs. The water is not

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 13.

very good, but it can be used for domestic purposes. Excellent water can be had by digging about 30 feet. There is very little fuel to be found, but it can be had within about 35 or 40 miles. Enough surface stones can be had for building purposes for the early settlers. There are no minerals of any kind. The only game to be found is prairie chicken and wild ducks. The climate is moderate; this part of the country is not subject to the high winds in summer and blizzards in winter that are so common and severe in Manitoba. The Fort Pitt and Carlton trail passes through the centre of this township. It is a first class trail and in good condition on account of so much traffic passing over it the first two or three years.—*John Molloy, D.L.S., 1903.*

Township 44.—This township is a very inferior one, being very hilly, and is entirely unfit for agriculture on this account. It produces first class grass for grazing purposes, but on account of the scarcity of hay meadows could hardly be called a good ranching township. The hills are from 50 to 200 feet high, being very steep and mostly covered with a thick growth of poplar on the northern slopes, a considerable amount of willows are also found growing mostly around sloughs. The greater part of the township is prairie. There is no timber large enough for building purposes and scarcely any for fuel. There are quite a number of large sloughs in the valleys between the hills, also a large lake in the northwestern part of the township, with good water. No creeks were seen. Stones are found in good quantity, enough for building purposes, at least for the early settlers, for a few years, but not enough to interfere with cultivation of the soil. No minerals of any kind were found. The only game seen was prairie chicken and wild ducks. The Fort Pitt and Carlton trail passes a few miles to the south of this township, and the Jackfish and Carlton trail about 12 miles to the north.—*John Molloy, D.L.S., 1903.*

Township 45.—I left Rosthern on the Prince Albert branch of the Canadian Pacific Railway on Thursday, May 21, 1903, and travelled westerly, crossing the Saskatchewan at the Doukhobor ferry on section 30, township 42, range 6, west of the third meridian, thence northwesterly to the southeast corner of township 45, range 13, west of the third meridian, where I commenced work. The trail was muddy and heavy owing to recent rains. The soil in this township is generally clay loam with a clay subsoil, and is well adapted for grain growing or ranching. The surface is rolling prairie, except in the northern part, where there are some hills. There are a few bluffs of poplar timber and patches of poplar and willow brush, scattered through the township. There is not sufficient fuel for settlers in the township, and not many hay marshes, but good grass grows everywhere. The water is good, except in a few lakes and ponds, where it is alkaline. There is no running water except a creek which crosses the northwest corner of the township. There are no water-powers. The climate in summer is mild. The first frost occurred on the night of September 1. There is a large quantity of poplar timber growing in township 45, range 14, west of the third meridian, which is the nearest available fuel. There are no coal seams in the township, and no stone quarries, only surface stones on the hilltop. There are no minerals of economic value, and the game that I saw was ducks, prairie chicken and wild geese. There are no settlers in this township.—*J. J. McKenna, D.L.S., 1903.*

Township 46.—The route followed to this township was from Rosthern, on the Prince Albert branch of the Canadian Pacific Railway, westerly, crossing the Saskatchewan at the Doukhobor ferry, thence northwesterly to the southeast corner of township 45, range 13, and northwesterly through said township. The soil in this township is a clay loam with a clay subsoil, and is suitable for grain growing or ranching, especially ranching, as there is an abundance of good water and grass. The surface is prairie, and is hilly in the north and south and nearly level in the centre. There are a few bluffs of poplar timber and patches of poplar and willow brush in the southern half of the township. The timber in the bluffs is from 2 to 8 inches in diameter. The grass in this township is not as good as in township 45, range 13, and is not good for

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 13.

hay as the grass does not grow high. The water in the creeks is fresh, and is, I think, permanent. The width of the creeks is about 40 links, with a depth of 3 feet and slow current. The land is not liable to be flooded. There are a number of small lakes or ponds, in which the water is mostly alkaline. There are no water-powers. The climate is mild in summer, with no summer frosts. The first frost occurred on the night of September 1. The nearest available fuel is in township 45, range 14. There are no coal or lignite veins in the township, and no stone quarries, only loose stones on the hills. There are no minerals of economic value in the township. The only game I saw was ducks, prairie chicken and geese. The trail from Carlton to Jackfish lake crosses this township. There are no settlers in this township.—*J. J. McKenna, D.L.S., 1903.*

Township 47.—The sections on the north and west sides of this township are rolling; the remainder of the township generally rough, broken, hilly and stony, the centre and southeast quarter of the township being very rough and broken by small creeks and deep ravines. Scattering clumps of brush are found in the south part of the township. As you go north poplar bluffs and heavy brush appear, until about 50 per cent of the north part of the township is covered with bluff and scrub. Field stones gradually disappear as you go north, the sections on the north side of the township being comparatively free from stones. The soil is mostly a rich sandy loam, from 4 to 6 inches in depth, with a sandy or clay subsoil, classed 3 and 4 on account of stones and broken surface, good for grazing purposes but generally not fit for cultivation. Not many sloughs and very little hay in this township. Water is fresh and plentiful in the creeks and sloughs, but in dry seasons might be scarce. There is no timber for lumbering purposes, and no stone quarries or minerals were seen in the township. The climate is good; frequent showers, bright days, cool nights and no frost. Ducks and prairie chickens are scarce. An odd jumping deer was seen. An old cart trail runs diagonally through the township from section 4 to section 34.—*Wm. R. Reilly, D.L.S., 1903.*

Township 48.—This township differs very much from the townships to the west and south of it. The surface is rolling. The north part of it is nearly covered with brush and poplar bluffs from three to eight inches in diameter. The bluffs will furnish abundance of fuel, fencing and rough timber for log buildings. In the south part are bluffs of poplar, willow and poplar scrub with openings of prairie. Willow is more plentiful than the poplar in the southeast quarter of the township. An old cart trail runs through the southeast quarter of the township. The soil generally is a rich loam from four to six inches in depth, mostly clay subsoil, comparatively free from stones and classes two and three. The township will be suitable for farming purposes. There is a large lake in the north half of section 33 with hay marsh on the east and south sides of it. There are very few sloughs. A small creek runs westward out of the township in section 7. Water is fresh in all, but there is not much in the township. Hay is limited. In dry seasons a quantity could be cut around the lake in section 33. The climate is good, frequent showers, bright days and no frost. There is no timber for lumbering purposes, no stone quarries or minerals in the township. Game is scarce. badgers, prairie chickens, coyotes and one bear were seen in the north part of the township. This township has been a favourite burying ground for the Indians, as a great number of graves are scattered all over the township.—*W. R. Reilly, D.L.S., 1903.*

Township 52.—(North outline.)—The western half of this range is level country and in sections 31 and 32, thickly covered with a forest of poplar, six inches in diameter and balm of Gilead. Near the low, swampy parts are belts of spruce averaging ten inches in diameter. North of section 33 most of the timber is fire-killed, though south of the line the forest of poplar, balm of Gilead and spruce continues. The western half of section 34 is wet and boggy. In sections 35 and 36 are numerous small ponds and marshes, surrounded by bluffs of poplar and clumps of spruce. There are

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 13.

also large hay marshes except in section 33, where the soil is light. A good trail from Battleford and Jackfish and Birch lakes to the big bend of the Carlton and Green lake trail crosses the base line at a point ten chains east of the quarter section on the north boundary of section 32. The soil is a sandy loam four inches to ten inches in depth with a subsoil of clay and stones.—*A. Saint Cyr, D.L.S., 1903.*

Range 14.

Township 35.—A trail running westerly from Saskatoon passes through this township, affording an easy means of reaching it. The soil is generally a clay loam with a clay subsoil, but in the southwesterly part of the township it is nearly pure sand; but the whole township can be classed as a good wheat raising district. In the northeasterly portion a few hills—the most southerly end of the Eaglehills—are met with. There is also one high hill in the centre of the township which is not touched by any of the lines. The whole township is open prairie. No timber, scrub, or even willows were encountered. Good hay can be cut around all the sloughs and lakes, but there are no hay marshes of any extent. In the sloughs the water was fresh but in the open lakes very alkaline. No running water was met with. In the beginning of August we had several severe frosts at night but the days were bright and warm. No fuel available nearer than township 36, range 12. There is some green poplar in the southwesterly corner of the township, but it is not large enough for either fuel or fencing. There are no minerals. A few ducks, prairie chickens and antelope were noticed.—*H. B. Proudfoot, D.L.S., 1903.*

Township 36.—A trail from Saskatoon to Tramping lake passes about one mile south of the southerly boundary of this township. With the exception of a few sections in the southeasterly corner of the township (which are in the Eaglehills where the soil is very light), the remainder of the township is eminently adapted for agricultural purposes, either grain raising or grazing. With the exception above noted the surface is all rolling prairie, no timber of any kind being met with. Good swamp hay can be cut around most of the sloughs, but there are no extensive hay marshes. No running water was found; the water in the sloughs was generally fresh. We had one frost in the beginning of August, but I do not consider that it was severe enough to do harm. The days were warm. The nearest fuel available is in township 38, range 13—poplar, balm of Gilead, &c. There are no stone quarries or minerals. Antelope, prairie chickens and partridge are numerous.—*H. B. Proudfoot, D.L.S., 1903.*

Township 37.—A trail running westerly from Saskatoon passes through township 35, range 14, affording the most convenient route for reaching this township. In a wet season, however, this trail is liable to be very soft in passing through range 13. The soil is a black or sandy loam alluvial deposit, with a clay subsoil—a good grain country. The surface is all open prairie—no bush of any kind. Hay can be cut around all the sloughs, and there are hay marshes of some extent in sections 36, 35 and 26. The water in all the sloughs and ponds is fresh. No running water was met with. There is no water power. In the middle of June we had very warm days, but cool nights and no frosts. There is no fuel nearer than township 38 in range 13, where there is considerable poplar, suitable for building, fencing and fuel. There are no stone quarries or minerals. Antelope, ducks and prairie chickens are numerous.—*H. B. Proudfoot, D.L.S., 1903.*

Township 38.—The Saskatoon and Battleford trail passes through the northeasterly section of this township, affording an easy means of reaching it. The soil is generally a black or clay loam with a clay subsoil, gravelly in places, but generally good farming land suitable for grain raising. The grass is short on the top of the undulations, but strong and rich in the valleys. With the exception of section 36, the surface is rolling prairie, along the east and west boundaries hilly. On sections 25

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 14.

and 36, thick small poplar is found, but of no large area in this township. Hay marshes of some size that have been cut for years are found in sections 1 and 2. Good hay can also be cut around all the numerous sloughs and ponds. No running water was noted. Fresh water sloughs and ponds are very numerous, and a large lake, which also contains fresh water, occurs partly in section 36. This lake has been surveyed. In June, 1903, there were hot days and cool nights; no frosts were registered. With the exception of the poplar, &c., on sections 36 and 25, no timber of any kind occurs in the township. No coal was found, nor stone quarries, nor minerals. Antelope and ducks were seen. Prairie chickens, although plentiful on the Eaglehills and eastward, are very scarce here.—*H. B. Proudfoot, D.L.S., 1903.*

Township 39.—The south trail from Saskatoon to Battleford passes through this township diagonally from southeast to northwest. The soil is a black and clay loam, with a clay subsoil and well adapted for grain raising. About one-half (the northeasterly part) of the township is partly timbered with second growth poplar and willow, the surface being rolling to hilly with a deep ravine on sections 25, 26 and 27, in which excellent spring water is found. The southwestern portion is open, hilly and rolling prairie. Some of the old timber (poplar up to 10 inches in diameter and a few birch) is still standing green, but the greater part of the timber is second growth poplar and willow. In years past large quantities of hay have been cut, but at present the height of the water in the sloughs and marshes has drowned the hay flats. No alkaline water is met with, the sloughs and ponds are all fresh and, as stated above, springs are found in the big ravine in sections 25, 26 and 27. A few lakes of some size have been traversed. No running water except extremely small streams are seen. No frost in last June, but very wet weather. There is plenty of poplar for fuel, but not sufficient for reservation. There were no stone quarries or minerals. Antelope, ducks and chickens were seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 43.—This township is first class for either farming or ranching purposes. The soil is principally a deep black loam with a clay subsoil, gently rolling or undulating. A good growth of grass and very few sloughs, although there are enough to supply water for stock. Good water can be had by digging about 25 to 30 feet. A considerable portion of the township is covered with scrub and heavy second growth poplar. There is a little poplar timber in the northwest corner that would be suitable for building purposes for early settlers. Apart from this, there is scarcely any timber that would do for either fuel or building. It can be had, however, about 35 miles to the north. Although there is a good growth of grass for grazing purposes, there is very little which can be utilized for hay. There are no creeks of any kind in this township, but the sloughs all contain good water. There are a few surface stones to be found, which would answer for building purposes. There are no minerals of any kind. The only kind of game to be found is prairie chicken, wild ducks and a few jumping deer. The Fort Pitt and Carlton trail, which goes also to Battleford and Saskatchewan, passes through the centre of the township from east to west.—*John Molloy, D.L.S., 1903.*

Township 44.—This township is first class for either ranching or farming, although the northern two miles of it is somewhat inclined to be hilly. The remainder is gently rolling or undulating, and the greater part of it is prairie, but there is a considerable portion of it covered with small poplar bluffs and thick willows, particularly along the western and northern rows of sections. The soil is chiefly a black loam with sandy loam or clay subsoil. The timber is scarcely large enough or in sufficient quantities to supply the early settlers with either fuel or building material. There is scarcely any hay to be found, although all the grass is of first class quality for grazing purposes. There is quite a number of sloughs and a large lake along the north boundary which supply sufficient water for stock. Good water can be obtained by digging 20 or 30 feet. There are no creeks of any kind to be found. There are

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 14.

sufficient surface stones to be of use to early settlers for building purposes for a few years, but there are no minerals of any kind. The only game to be found is prairie chicken, wild ducks and a few jumping deer. The Fort Pitt and Carlton trail passes a few miles to the south and one branch of it passes through the township entering it on section 2 and running in a northwesterly direction. The Jackfish and Carlton trail is about 12 miles to the north.—*John Molloy, D.L.S., 1903.*

Township 45.—The route followed to this township was from Rosthern on the Prince Albert branch of the Canadian Pacific Railway westerly crossing the Saskatchewan river at the Doukhobor ferry, thence northwesterly to the southeast corner of township 45, range 13, thence westerly through the same township. The soil is mostly clay with clay mixed with stones on the hills, with clay subsoil and is not well suited for agriculture. The surface is broken by two large lakes in the south half of the township. These lakes are surrounded by poplar timber. The remainder of the township is nearly all hilly prairie with bluffs of poplar timber and poplar scattered through it. The timber is poplar from 2 to 12 inches in diameter and surrounds the lakes in the south half, also bluffs of poplar and poplar with willow brush alternate with the prairie in the rest of the township. There is one hay meadow about 50 acres in extent in the southeast corner but very poor short grass grows in the rest of the township. There is one creek about 30 links wide and 3 feet deep which crosses a small portion of the northeast corner of this township; the water is fresh. The water in the lakes is alkaline. I think the water will be permanent. The land is not liable to be flooded, and no water powers exist. The weather in summer is mild; the first frost occurred on the night of September 1. There is sufficient poplar timber in the township for its supply and for adjacent townships also. No coal or lignite veins were seen, no stone quarries and no minerals of economic value. The only game I found was ducks, geese and prairie chickens. There are no settlers in the township. I think owing to the surface of the township being much broken with hills and lakes and the occurrence of much timber, that it would be advisable to hold it as a timber reserve for fuel for adjacent townships.—*J. J. McKenna, D.L.S., 1903.*

Township 46.—The soil in this township is generally clay loam and clay subsoil and is suitable for grain growing or ranching, as there is an abundance of fresh water and grass. The surface is rolling prairie with hills in the north and south portions of the township. There are many poplar bluffs and patches in the southern half of the township. The poplar on the bluffs is from 2 to 8 inches in diameter, but is not sufficient for fuel for the southern half of the township, where it is located. Good hay grows nearly everywhere, but more especially in the northwest corner of the township where there is a large hay marsh. There are three creeks crossing this township, also several small lakes and ponds. The water in the creeks is fresh, but in most of the lakes and ponds it is alkaline. The streams are small, about 30 or 40 links wide, and three feet deep with a slow current. The lands adjacent are not liable to be flooded. There are no water powers in this township. The climate in summer is mild with no summer frosts. The first frost occurred during night of September 1. The nearest available timber is in township 45, range 14, west of the third meridian, where considerable is growing. There are no stone quarries, only loose stones on the hills. There are no minerals of economic value in the township. Wild geese, ducks and prairie chicken are all the game seen. The old trail from Carlton to Jackfish lake crosses the township. There are no settlers in the township.—*J. J. McKenna, D.L.S., 1903.*

Township 47.—This township is very similar to the townships north and west of it. The surface of the tiers of sections on the east and west side of the township is rolling and stony; the rest of the township is rough, broken, hilly and stony. Clumps of willow, poplar and alder brush and bluffs of poplar from 2 to 8 inches in diameter are scattered all over the township. The poplar bluffs will furnish good fuel and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 14.

timber for fencing purposes and rough log buildings. The heaviest bluffs are in the northwest quarter of the township. A large creek from the north enters the township in the northeast quarter of section 33, flows southerly through the centre of the township in a deep valley in the north part of the township gradually widening out to a flat in the south part of the township. This valley is formed by a succession of hills and has not a well defined outline. The stream in the north of the township is from 6 to 8 feet wide, 1 foot to $1\frac{1}{2}$ deep and a strong current. It gradually deepens, widens and becomes very sluggish where it leaves the township in the southeast quarter of section 5. A water-power could be developed in the north part of the township, but I do not think the stream is permanent. Large lakes with marshy shores are found in sections 30 and 31. They did not appear to be permanent, hence were not traversed. Water is fresh in the creeks and small sloughs found in nearly every section in the township. The soil is a good loam on clay and sand subsoil. It is very stony and is mostly classed as being unfit for cultivation, but well suited for grazing purposes. A great quantity of hay is found along the creek and around the sloughs, but on account of the stones would be hard to cut. No stone quarries, minerals or timber for lumbering purposes occur in the township. The climate is good, with sufficient rain and lots of sunshine, with cool nights but no frost. Game is scarce, some ducks, prairie chickens and an odd jumping deer were seen.—*Wm. R. Reilly, D.L.S., 1903.*

Township 48.—The two tiers of sections on the west side of the township are rolling and not quite so stony as the rest of the township. The east half is rough, broken, hilly and stony. A large creek from 8 to 10 feet wide and from 1 to $1\frac{1}{2}$ feet deep and with a strong current enters the township, with low banks in the northeast quarter of section 34, and flows southward in a well defined, narrow valley through sections 34, 35, 27, 22, 15, 10 and 3, being joined in sections 22 and 23 by small creeks from the east and leaves the township in the southeast quarter of section 4. The valley gradually deepens from 20 feet in the north to 150 feet in the south. The creek has the appearance of one that would dry up in dry seasons as brush in many places is growing across the entire bed. If this were a permanent stream it would be valuable as a water power. At time of survey from 50 to 150 horse-power could be developed with a head from 10 to 30 feet. The soil throughout the whole township is a rich black loam from 4 to 10 inches in depth, with a sand or clay subsoil, but on account of stones is generally classed as being quite unfit for cultivation. It supports an excellent growth of grass, and is good grazing ground. Very few ponds or sloughs are found in the township, and only a very limited quantity of hay. Thick clumps of brush and poplar bluffs from 4 to 6 inches in diameter are dotted all over the township. The bluffs will furnish good firewood and timber for rough log buildings, the heaviest bluffs being found in the northeast quarter of the township. No minerals or stone quarries were found in the township. There is no timber for lumbering purposes. The water in all the sloughs and creeks was fresh and good. There are many ducks and prairie chickens in the township. A few badgers and an odd jumping deer were seen. The climate is good, abundance of rain, much sunshine, cool nights and no frosts.—*Wm. R. Reilly, D.L.S., 1903.*

Township 52.—(North outline).—The western edge of the Thickwood hills is crossed in this range, the height of land occurring in sections 31 and 32. The western half of section 31 is hilly. The eastern half is rolling, broken by numerous large bogs, extending through to sections 32 and 33, where the height of land between the Saskatchewan basin and the waters to the north lies. The surface of these sections is very stony and is covered with a dense forest of pine, 10 inches in diameter, birch 8 inches in diameter, poplar 6 inches in diameter, spruce and balsam of Gilead, extending southward a distance of 3 or 4 miles. The eastern edge of this forest follows in general a southeasterly direction from Birch lake. Sections 34, 35 and 36 are covered by pine ridges separated by tamarack bogs. The land is very stony and is covered by thick un-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 14.

derbrush. South of the base line in section 35 is a range of hills, running in a south-westerly direction, forming the continuation of the height of land crossed in section 33. North of the base line and about 2 miles distant appears a deep depression occupied by a lake, 3 or 4 miles in length. This lake which appears to extend eastward across the boundary of range 14, is fed by a stream crossing the base line a quarter of a mile west of the northeast corner of section 34. An Indian pack trail leading to this lake crosses the line from the south a quarter of a mile west of the northeast corner of section 34. Section 36 is broken by high hills. The soil is a sandy loam, 6 inches to 10 inches in depth, with a subsoil of clay and stones.—*A. Saint Cyr, D.L.S., 1903.*

Range 15.

Township 35.—This township is situated about 60 miles west of Saskatoon, and 50 south of Battleford, and may be reached by good wagon trails from either place. From Saskatoon, which is much the better supply station, the route of approach is by way of what is known as the old Edmonton trail, as far as Eaglehills creek crossing where, though there is no bridge, the stream can be forded in safety at all but extremely high stages of water. About two miles west of the crossing the old Lizard lake and Edmonton trail is met with, striking southwesterly. This is followed through the Bear hills passing northwest of Lizard lake. These hills are well named as they present a very barren appearance, affording the traveller no fuel of any kind and very little water. Upon approaching the boundary of township 35, range 15, some small patches of poplar and willow scrub are met with and the country presents a more productive appearance. The trail enters the township on section 13 by way of a narrow neck of land between two alkaline lakes, and thence it continues on a westerly course across the township about two miles north of the south boundary, skirting the northerly edge of what is known as 'the 60-mile bush,' the easterly end of which commences on section 2 from which it extends westerly, covering portions of sections 3, 4, 5, 7, 8, 9 and 10. The soil is chiefly light sandy loam with clay subsoil, and may be termed second-class in most places. Portions of sections 2, 11, 10, 9, 8, 7, 16, 21 and 29 may be termed first-class and should be well suited for general farming purposes. North of the old Edmonton trail the surface of the township is that of an open rolling prairie, whilst south of the trail the portions above mentioned are covered with poplar bush. The greater portion of what is locally known as 'the 60-mile bush' occurs in the southwesterly part of the township, covering portions of sections 3 to 10 inclusive. This wooded area is chiefly covered with small poplar trees of from 2 to 6 inches in diameter, a few being as large as 8 inches. Few, if any, trees were observed of sufficient size or otherwise suitable for being manufactured into lumber. Although this bush is of little value as a timber supply, it is of great local value as fuel supply for the district. No wild hay marshes of any extent were observed, though the prairie grass is good and abundant everywhere for grazing purposes. There is one large lake of alkaline water on this township, covering the greater parts of sections 13 and 23, as well as portions of sections 12, 14, 24, 26, 22 and 27. The water of this lake though clear in appearance is unfit for drinking purposes, being very strongly alkaline. A portion of another large saline lake extends to sections 1 and 12, whilst at the southwest of the township there is a small fresh water lake covering portions of sections 5 and 6. Small fresh water sloughs were, however, quite numerous everywhere during the month of May. Nothing in the shape of water-power exists on this township. The local supply of fuel for the township is 'the 60-mile bush,' which is very convenient and sufficient for some years to come. It is composed chiefly of poplar trees of small size but when dry, these form an excellent fuel. Limestone in place occurs upon south boundary of section 3. Prairie chicken are quite plentiful about the edges of the woods, and ducks in great variety are found upon all the lakes and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 15.

sloughs in the township. Small white geese or wavies were seen in great numbers about the shores of the alkaline lakes during the month of May. Two swans were also observed at the same time and place. A few large brant geese were also observed later in the season. Curlews and many varieties of the plover family are very common through the district. A few antelope were seen about 'the 60-mile bush,' and though no deer were observed, several antlers were found indicating their recent existence there. Other smaller animals, such as badgers, prairie wolves, foxes, skunks and gophers are quite numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 36.—This township is situated about 60 miles west of Saskatoon and 45 miles south of Battleford, and is accessible from both places by means of fairly good wagon trails, Saskatoon being the nearest railway town, but Battleford being the nearest post office and telegraph station. The trail from Battleford to Swift Current passes along the westerly boundary of the township and affords a most convenient route. The soil is chiefly a sandy loam with clay subsoil, and in many places, particularly on the hill tops and summits of ridges it contains many boulders. The better sections of the township are suited for general farming purposes, whilst the rougher sections are more suited for stock-raising. The surface is open, rolling prairie, becoming hilly in some localities, particularly about the shore and towards the southeasterly end of a large salty lake occupying a central position in the township, as well as upon the shores of a smaller fresh water lake on sections 11 and 12. There is a small quantity of poplar and willow scrub, but not sufficient to be of any economic value. These are the only trees of any description in the township, and are of a very small and scrubby character, too small to be used as firewood. The township contains very few hay meadows or marshes of any size, although a good growth of prairie grass is everywhere to be found. By far the largest body of water is that of a salty lake covering portions of sections 9, 10, 15, 16, 17, 20 and 21. Another smaller lake of extremely bad alkaline water lies on the westerly side of section 30, and extends into range 16, but in the southeasterly portion of the township, on sections 11 and 12, there is a fresh water lake of about a mile and a quarter in length and a quarter of a mile in width; also another small one covering part of sections 1 and 12. Besides these lakes, numerous small fresh water sloughs are found in various parts of the township, those noted being on sections 4, 7, 19, 20, 23, 28, 30, 34 and 35. The water in most of these sloughs I judged to be permanent. No water power can be developed in the township. No fuel is found upon this township, but a convenient supply of wood is found in the township immediately to the south of it. No coal or lignite veins are known to exist in this locality and no stone quarries, or minerals of economic value. Prairie chickens are comparatively numerous, while ducks of great variety are found upon all the lakes and sloughs in the township. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen, although these are more numerous towards the wooded sections of the country, whilst other smaller animals, badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate see that given for township 35, range 16, west third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 37.—This township, which is situated about 60 miles west of the town of Saskatoon and 40 miles south of Battleford, is accessible from either of these places by good wagon trails. It is the more easily accessible from Battleford, as the distance from that place is not only less than that from Saskatoon, but the trail is more direct, and is in better condition for heavy traffic. The soil is chiefly clay and clay loam, which in many places, particularly on the tops of hills and ridges, contains many boulders. Some sections of the township are fairly well suited for general farming

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 15.

purposes, whilst others are more suitable for grazing lands. The surface is entirely open and varies from that of an undulating surface to what might be termed decidedly hilly. No timber of any description is found upon this township. No hay marshes were observed in the township, but the prairie grass was fairly good on most of the sections. As is the case on the majority of the townships in this section of the country, the larger bodies of water are alkaline or salty. The largest lake in the township is situated in sections 22 and 23, and covers about 200 acres. This lake is strongly alkaline. A smaller one, also alkaline, covers portions of sections 23 and 24. A long narrow lake with saline water is found upon sections 28, 29, 32 and 33, whilst another of much smaller dimensions occurs at the corners of sections 29, 30, 31 and 32. Besides these bad water lakes, several fresh water sloughs or ponds were met with. One of these was crossed by the line between sections 9 and 16; another by the line dividing sections 19 and 20 and another, was found on the northwesterly portions of section 24. No water power exists in the township. No fuel of any description is found upon this township, but a sufficient supply for immediate use is found in 'the 60-mile bush,' only a short distance to the south. No coal is known to exist in this neighbourhood. No stone quarries were noticed in the township nor any minerals. Prairie chickens were comparatively numerous and ducks of great variety are found upon all the lakes and sloughs in the township. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen, although these are more numerous towards the wooded sections of the country, whilst other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are quite numerous. For description of climate see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell D.L.S., 1903.*

Township 38.—This township is situated about 60 miles northwest of the town of Saskatoon, and 30 miles south of Battleford, from which latter place it is easily accessible by means of the old wagon trail leading from Battleford to Swift Current. Saskatoon is the nearest railway depot, but Battleford is the most convenient post office and telegraph station. The soil is chiefly clay loam or heavy clay for the most part containing many boulders. The better sections of the township might be used for agricultural purposes, but most of the sections are so stony and hilly that they are more suited for grazing lands. The surface of the township is open, hilly prairie, many hills ranging from 50 to 100 feet above the low lands. No timber of any description is found upon this township. Several rather extensive hay marshes occur in sections 2, 3, 10, 11, 8, 17, 15, 22, 23, 35 and 36. The water is as a rule fresh, the largest body being situated upon sections 2, 3, 10 and 11. This lake is quite shallow, and of a grassy character, but affords a permanent supply of water. Another marshy lake of similar character lies on sections 8 and 17, whilst other small ponds and sloughs are found upon sections 11, 12, 13, 14, 15, 22, 23, 26, 27, 32, 33, 35 and 36. Besides the above, a small stream known as Crane creek flows through a well defined deep valley upon sections 31 and 32, and contains a good supply of fresh water during the greater part of the year, although during extremely dry weather it almost entirely disappears. No water-power exists in the township. No timber or other fuel supply is found upon this township, and the most convenient source is township 40, range 15, immediately to the north. No stone quarries or minerals of economic value are known to exist in the township. Ducks of great variety are found upon all the lakes and sloughs in the township. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen, although these are more numerous towards the wooded sections of the country, whilst

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 15.

other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 15, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 39.—This township is about 70 miles northwest of the town of Saskatoon, the nearest railway depot, and about 30 miles southeast of Battleford, the nearest post office and supply station. It may be conveniently reached from either of these places, as a good wagon trail leading from Saskatoon to Battleford passes close to the northeast angle of the township. The Battleford and Swift Current trail is also quite convenient, passing only about 4 miles westward. The trails leading to Battleford are somewhat hilly, but otherwise in very good condition during the greater part of the year for the passage of any ordinary loads. A large proportion of the soil may be termed first-class, whilst other sections may be considered as second or third-class. The soil is chiefly a clay loam with clay subsoil. Black sandy loam with good subsoil is found in some localities, particularly along the valley of what has been named Crane creek, which flows in a winding course through the township. The soil of this township, like that immediately to the north, is particularly well adapted for general farming purposes, and being convenient to the town of Battleford is, in my opinion, a first-class locality for homesteading. It might be mentioned here that a preliminary railway location line is staked out through sections 13, 14, 22, 23, 27, 28, 32 and 33 of this township. The surface of the township is almost entirely open prairie, no timber being found upon it, and the only scrub being a few small patches in the valley of Crane creek. The greater part of the township is quite level, but it is cut through by the valley of Crane creek, which in the southern part of the township is very deep, ranging from 50 to 100 feet. The sections which are broken by the valley of this creek are chiefly 35, 26, 25, 24, 14, 15, 16, 9, 4 and 5. Several large hay marshes lie within the township, one covering the northeastern part of section 36; another, portions of sections 8 and 17; another is on the line between sections 33 and 34, and another of about 150 acres in extent on sections 10 and 3. Besides these, much of the valley of Crane creek contains a large quantity of good hay, and the whole township supports a good strong growth of prairie grass. This township is well supplied with fresh water, Crane creek passing from the northeastern part of the township to the southwestern. Besides this creek, fresh water is found in the hay marshes on sections 3 and 10, and 8 and 17, and numerous other small ponds along the north boundary of the township. The southeastern and the northwestern sections are comparatively dry. The general indications are that the climate of this locality is not unsuited for the growing of general farm produce. No summer frosts were observed during the time that we were engaged in subdividing the township, but on or about June 9 when we were engaged in surveying 18 or 20 miles farther to the south a heavy summer frost was experienced, which cut down many of the wild flowers, and particularly the wild pea vines. Although no fuel was found in the township, plenty of good dry wood is readily available from the township immediately to the north of it. No coal or lignite veins are known to exist in this locality. No stone quarries or minerals of value are known to lie in this township. Antelopes are occasionally met with, and badgers, foxes and prairie wolves are quite numerous. Ducks of many varieties are very abundant.—*J. W. Tyrrell, D.L.S., 1903.*

Township 40.—This township is situated about 70 miles northwest of the town of Saskatoon, which is the nearest railway depot, but only about 25 miles southeast of Battleford; the nearest post office and supply station and immediately adjoins on the south and east the Red Pheasant Indian reserve. It is within 6 or 8 miles of the northern branch of Saskatchewan river and the northerly portion of the township lies within the timber belt of that river valley. There are good wagon trails passing diagonally through the township from northwest to southeast, leading both to Battleford on the one side and Saskatoon on the other. The new government trail from

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 15.

Saskatoon to Battleford passes only 3 or 4 miles to the north of the township and on the westerly side about $4\frac{1}{2}$ miles distant, the old Battleford and Swift Current trail passes; so that the township is easily approached by several trails leading either from Battleford or Saskatoon. The trails from Battleford to the township are somewhat hilly but otherwise are very good during the drier seasons of the year. The soil is chiefly first-class, consisting largely of black loam or sandy loam with clay subsoil, and in some localities, clay soil containing a few boulders. The township I consider particularly well suited for general farming purposes, as everywhere upon it the natural growth of grass and other vegetation is very luxuriant. On section 11 a small patch of land comprising about 3 acres is already under cultivation and looked exceedingly well. No settler was, however, found upon the township. The southern portion consists of open prairie land somewhat broken and rolling though not very hilly. A considerable amount of scrub and willows is found on sections 13, 14 and 23, but sections 24, 25, 26, 35 and 36 are almost entirely covered with solid bush which is composed chiefly of poplar with a small proportion of birch. Forest fires, not many years ago, destroyed most of the large timber, the remains of which are still everywhere to be seen. Many old birch stumps and dead trees were observed of from 12 to 15 inches in diameter. I should judge that about one quarter of this township is covered with woods, the remaining three-quarters being either open prairie or prairie containing some willows and scrub. As already mentioned, sections 24, 25, 26, 35 and 36 are covered with bush, but a very small proportion of this bush is of such size or character as to be suited for the manufacture of timber, nearly all the large trees having been destroyed some years ago by forest fires, a few, however, still remain and consist chiefly of the aspen poplar. The average size of the trees in this wooded section is probably 3 inches, certainly not more than 4 inches. Fine hay marshes or meadows are found everywhere over the prairie sections of the township. A large quantity of the fine hay was observed on sections 13, 14 and 23, some of which was being cut and saved for winter use either by Indians from the adjoining reserve or settlers from some neighbouring locality. The quality of the hay so cut and dried appeared to be very good and seemed to be very much appreciated by my horses when we were passing through the township. The township is particularly well supplied with fresh water at all seasons of the year. Grassy sloughs containing fresh water were met upon most every section and several small brooks take their rise in the northern sections, one apparently having its source from the ponds in sections 23 and 36, runs in a southerly direction through sections 14, 11 and 2, passing into section 35 of township 39. This brook is the same as has been called 'Crane creek' in the more southerly township through which it passes. Two or three other small fresh water streams have their source in the northern sections of the township and run in a northeastern direction emptying into the Saskatchewan. While the volume of all these streams is quite small their flow appears to be constant and thus there is a permanent and continuous supply of good water for the ranchers or future settlers. Judging from the excellent supply of fresh water afforded by this township as well as the good quality of the soil, I consider it one of the best locations in the district for farm settlements. The streams of this township are all too small and insignificant to afford any considerable water-power. The general indications are that the climate of this locality is well suited for farming and grazing purposes. It is considerably sheltered from the north by the belt of timber bordering on the Saskatchewan, which large river of itself probably has a moderating influence on the climate. No summer frosts were experienced by us whilst engaged in the survey of this township. It possesses in itself an abundant supply of good dry wood as well as a growing forest. The five northern sections of the township as well as those of the adjoining townships to the north and east are well covered with both green and dry wood. No stone quarries of any description or minerals of value were found upon the township. As is usually the case, through-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 15.

out the Northwest Territories, game is more plentiful in wooded or scrubby districts than upon the more open prairie country. Ducks of many varieties were very numerous and prairie chicken were also found upon the scrubby sections. Antelope are occasionally found in the locality, whilst in the woods in the northern part of this township the tracks of a black bear were observed by some members of my party. Rabbits are very numerous in the woods.—*J. W. Tyrrell, D.L.S., 1903.*

Township 47.—We started by trail for Carlton, Tuesday, April 28, but arriving at the crossing, found the river full of ice, and were thus unable to cross till Friday, May 1. The trail was very soft in places, and the streams swollen, making travel on the road very slow. The township is rough, broken, hilly and stony prairie, thickly covered with clumps of willow and alder brush and scattered bluffs of poplar. Numerous fresh water sloughs are to be found in every section of the township. Lost-horse creek enters the township in the northwest quarter of section 33, and traverses the two westerly tiers of sections, leaving the township in the southwest quarter of section 6. The creek flows in a valley from a quarter to a third of a mile wide, with well defined banks from 100 to 150 feet high. The stream is rapid, varying from 8 to 20 feet wide and is from 1 to 2 feet deep, according to rate of current. Should the stream be permanent it would be a valuable water-power capable on account of the great fall of the creek in the township, of being utilized again and again by the building of dams, and would develop from 75 to 250 horse-power, with a head from 10 to 30 feet, but this being a very wet season the creek may be swollen beyond its usual size, and in dry seasons might be a very small stream. The poplar timber in the bluffs varies in size from mere saplings to 10 inches in diameter, and would furnish sufficient timber to supply the needs of the settler for fuel and rough log buildings. The heaviest bluffs are found in the northeast quarter of the township. The soil is a good black loam, mostly clay subsoil, but the presence of a great quantity of stones renders it unfit for cultivation. It supports a good growth of grass, and is well adapted for grazing purposes. A large hay slough is found in the east half of section 36; a rough log building being located on the same, showing that the rancher had some day made use of the hay. Outside of this hay slough very little hay is found in the township. No minerals or stone quarries are to be found in the township, but the field stone is valuable for building purposes. The only game is ducks, prairie chicken and an odd jumping deer. The climate has been very variable, numerous rain and snow storms in May, frequent showers in June and abundance of rain in July, but no summer frosts.—*Wm. R. Reilly, D.L.S., 1903.*

Township 48.—The township is very similar to township 47, range 15. The surface is rough, broken, hilly and stony prairie covered with clumps of willow brush and bluffs of poplar. The sloughs are not nearly so numerous as in township 47, range 15, but three large lakes were met with and traversed. One of these lakes is an expansion of Lost-horse creek, and is situated principally in the southwest quarter of section 17. This is a fine fresh water lake, containing abundance of jackfish. Lost-horse creek enters the township in the west half of section 33 and leaves the township in the west half of section 4, traversing the second and third tiers of sections from the west boundary in its course southward. The valley of the creek is not so well defined as in township 47, range 15, the outline of the valley being rather a succession of hills ranging from 50 to 100 feet than that of a continuous bank. The volume of the stream is very similar to that of township 47, range 15, but the stream itself is rather sluggish, flowing through marshy flats, and excepting in section 4 it would not be available with ordinary expense as a water-power, and then it would rate similar to that of township 47, range 15. The soil is a good loam, mostly clay subsoil and supports a good growth of grass, but it is too stony to be used for cultivation purposes and consequently only fit for stock raising. A very limited quantity of hay is to be found in the township. The water in all the sloughs and creeks is fresh. No minerals

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 15.

or stone quarries were found, but the field stone is readily available for building purposes. Duck, prairie chicken, badger and a few jumping deer are the only game to be found.—*Wm. R. Reilly, D.L.S., 1903.*

Township 52.—(North outline).—The whole of section 31 lies in the lake, the eastern shore of which intersects the base line at a point 18 chains east of the northeast corner of section 31. Section 32 is swampy and stony, covered in places with small spruce, some scrub, willows and a few poplar. Section 33 is very stony and undulating, with a general slope towards the east. A forest of poplar, 8 inches in diameter, spruce 10 inches in diameter, birch 8 inches in diameter and jackpine 12 inches in diameter growing straight to a length of 40 feet, covers the eastern half of this section and the whole of sections 34, 35 and 36. Here the country becomes more hilly, and in places boggy. The underbrush in this forest is very heavy, consisting of large alders and thick willow. The wagon roads in this heavily timbered country, with the exception of the one cut by ourselves, have not been extended to any distance beyond the shanties. One Indian pack trail crosses the line about 10 chains west of the quarter section post on the north boundary of section 36. The soil is a black and sandy loam varying from 4 to 10 inches in depth, with a subsoil of clay and stones.—*A. Saint Cyr, D.L.S., 1903.*

Range 16.

Township 35.—This township is situated about 65 miles west of Saskatoon and 50 miles south of Battleford, and may be reached by good wagon trails from either place. From Saskatoon, which is much the better supply station, the route of approach is by way of what is known as the old Battleford trail as far as Eaglehills creek crossing where, though there is no bridge, the stream can be safely forded at all but extremely high stages of water. About two miles west of the crossing the old Lizard lake and Edmonton trail is met with, striking southwesterly. This is followed through the Bear hills passing northwest of Lizard lake. These hills present a very barren appearance, affording the traveller no fuel and very little water. The old Edmonton trail enters the township on section 13 and thence it continues on a westerly course across the township about two miles north of the south boundary. The soil is sandy and clay loam generally, having a clay subsoil, and may be said to range from first to third-class; as farming land it should be well suited for the production of all our common cereals and root crops. The surface of this township is open rolling prairie, although sections 11, 12, 13 and 14 are chiefly covered with poplar woods. The only timber supply found in this locality is that of 'the 60-mile bush' covering sections 11, 12, 13 and 14, as well as extending into range 15. The timber found in this bush is however, very small, ranging from 2 to 6 inches in diameter, and is therefore of little value as a supply of timber or lumber. Although good grass was observed to be everywhere and plentiful, no extensive hay lands or marshes were observed in the township. The water supply of this township is chiefly fresh and is quite plentiful in the numerous small ponds and sloughs found upon almost every section. Nothing in the shape of a water-power exists upon the township. No stone quarries exist upon the township nor were any minerals found. With regard to the occurrence of game in this locality it may be mentioned that prairie chicken are quite plentiful about the edges of the woods. Ducks in great variety are found upon all the lakes and sloughs in the township. Small white geese or wavies were seen in great numbers about the shores of the alkali lakes during the month of May, and two swans were also observed at the same time and place. A few large brant geese were observed later in the season. Curlews and many varieties of the plover family are very common throughout the district. In regard to animals, a few antelope were seen about 'the 60-mile bush' and though no deer were observed, several antlers were found indicating their recent

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 16.

existence there. Other smaller animals, such as badgers, prairie wolves, foxes, skunks and gophers are quite numerous. With regard to climate, the year 1903, has been a very exceptional one, and as late as May 22 a fall of six inches of snow was experienced. The spring was very late and cold, so that it was towards the end of May before there was any grass for our horses. June was a fine dry summer month, but during July, rain was very abundant, making a fine growth of grass everywhere. Upon the 10th and 26th of July hail storms were experienced, and about June 9 a severe summer frost occurred which blighted the wild pea vines and some other flowery plants. Notwithstanding this, however, in the immediate vicinity only a few miles to the north, excellent crops of wheat and oats were harvested in the autumn, proving that such frosts as did occur were not sufficient to do serious damage. This township is exceptionally well situated in regard to its fuel supply, as abundance of wood may be obtained for immediate use from 'the 60-mile bush' already referred to. No coal beds are known to exist in this township.—*J. W. Tyrrell, D.L.S., 1903.*

Township 36.—This township is situated about 65 miles west of Saskatoon, and 45 miles south of Battleford, and may be reached from either place by fairly good wagon trails. Saskatoon is the nearest railway station, and consequently is perhaps the best supply station for the locality, but Battleford being considerably nearer is the more convenient post office and telegraph station, and from this place it is most easily reached by the old Battleford and Swift Current trail, which passes through the easterly tier of sections in the township. The soil is sandy clay and light sandy loam, with clay subsoil, and contains many boulders in most parts. It is probably suited for general farming purposes, but the existence of a large strongly alkaline lake, with exceedingly bad and offensive water, makes the township a very undesirable one for settlement, and on account of the presence of this bad water lake, it is more suited for grazing lands, for there is as a rule a good strong growth of grass right up to the muddy flats of the lake. The surface is open rolling prairie, broken only by the depression in which Whiteshore lake lies, the banks of this lake being from 50 to 100 feet in height. No timber of any description is found upon the township. No natural hay meadows or marshes were observed, although there is a good growth of prairie grass. As above mentioned, the large body of water which has been named Whiteshore lake lies in the northerly part of this township, covering portions of sections 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32 and 34, and it contains exceedingly offensive water which, with a favourable wind, can be scented at a distance of two or three miles. The chemical contents of this water are chiefly hydrous sulphate of sodium, but it contains traces of magnesium sulphate and sodium chloride, and apparently the combination is not a happy one. Upon section 11 there is also a small saline lake, and upon section 25 there is another lake, covering perhaps 200 acres, of extremely salty water. The bottom of this lake is covered with a white highly crystalline salt deposit. At the junction of sections 28, 29, 32 and 33 there is another small lake, or perhaps more probably a slough, of very foul alkaline water. On the line between sections 2 and 3 two other small alkaline lakes were found. Besides the above mentioned, a few small fresh water ponds are found, one on section 15, another on section 16, and others on sections 35 and 36. There is no water-power in the township. No fuel of any description is found in the township, the nearest available supply being in 'the 60-mile bush' in the township immediately to the south. No stone quarries or minerals of economic value were found. Prairie chicken are comparatively numerous. Ducks of great variety are found upon all the lakes and sloughs. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, and the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelopes are occasionally seen, although these are more numerous towards the wooded sections of the country, but other small animals, such as badgers, prairie wolves, foxes,

4-5 EDWARD VII.. A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 16.

skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 37.—This township, which is situated 65 miles west of Saskatoon and 40 miles south of Battleford, is accessible by fairly good wagon trails from either place. Saskatoon is much the preferable supply station of the two, being situated upon the Prince Albert branch of the Canadian Pacific Railway, although the township is more easily accessible from Battleford, as the trail leading from that place is a very good one, and the distance considerably shorter. The old main trail from Battleford to Swift Current passes directly through the township from north to south. The soil varies from light sandy loam to heavy boulder clay, with clay subsoil, and being exceptionally well watered is very suitable for grazing purposes, although many sections of the township are also well suited for general farming purposes. The surface is open gently rolling prairie, although somewhat hilly in some sections. No timber of any description is found upon this township, but it possesses some exceedingly good hay land, especially along the valley of a small stream which has been named Crane creek, which traverses the township from the northeasterly part in a winding course through most of the central sections. Grassy sloughs or hay marshes were also found upon sections 10, 11, 20, 28 and 29. The largest body of water lies in section 35, and is slightly alkaline, although much less so than most other so-called alkaline lakes. Upon sections 2 and 3 a long narrow lake of salty water was found, but in addition to these there are numerous small fresh water sloughs or ponds well distributed over the township. The water of Crane creek is also sufficiently fresh for drinking purposes, although its volume is quite small, and during the driest seasons of the year it disappears entirely. No water-power of any importance can be developed in this township. No fuel supply is found in the township, but a convenient source exists in 'the 60-mile bush' a short distance to the south. Coal, stone quarries or minerals are not known to exist upon the township. Ducks of great variety are found upon all the lakes and sloughs in the township, while prairie chickens are also comparatively numerous. Small white geese may be seen in great numbers during the spring and autumn seasons, whilst the large geese also visit the locality in lesser numbers during the same season. Curlews and many varieties of plover are quite numerous throughout the district. Antelopes are occasionally seen, although these are more numerous towards the wooded sections of the country, whilst other smaller animals, such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 38.—This township is about 65 miles northwest of the town of Saskatoon and 30 miles south of Battleford, from which latter place it is easily accessible by the old wagon road leading from Battleford to Swift Current; this road passing directly through the township from north to south. Battleford is the nearest post office and telegraph station, but Saskatoon is the nearest railway depot. The soil varies from that of sandy loam to heavy clay, but everywhere it contains many boulders. The better sections of the township are suited for farming purposes, but the greater part being rough and stony is more suited for ranching land. The surface is open rolling prairie, being slightly hilly toward the northwest. It contains no timber or scrub of any description. The township contains some good hay lands, one particularly large marsh about 200 acres in extent upon sections 12, 13 and 14, adjoining a large lake. Another hay marsh of perhaps 150 or 200 acres in extent lies upon sections 27 and 28, while other smaller meadows were found upon sections 29, 30, 31, 32, 33 and 34. The valley of Crane creek, which passes through sections 14, 23, 26, 25 and 36, also produces a considerable quantity of marsh hay. The township is exceptionally well supplied with water, some of which, however, is strongly alkaline and unfit for domestic use. The largest lake in the township is, however, sufficiently fresh for drinking purposes,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 16.

although slightly saline. It lies upon sections 2, 10, 11, 14 and 15, and is both fed and drained by the stream known as Crane creek. The next lake in order of size lies in sections 30 and 31, but is strongly alkaline. There is another small alkaline lake at the junction of sections 29, 30, 31, 32, and another at the corners of sections 14, 15, 22 and 23. Besides these, a small lake of salty water lies on the line between sections 3 and 4. Fresh water ponds or sloughs are fairly well distributed over the surface of the township, being found upon sections 1, 2, 8, 9, 10, 14, 15, 17, 21, 22, 23, 29, 32, 33 and 34. Crane creek flows in a southerly direction through sections 36, 25, 26, 23 and 14. No water-power of any consequence exists in this township. No fuel is found upon this township, the most convenient supply being upon township 35, range 15. Coal is not known to exist in the locality, nor were minerals of value or any stone quarries observed during the survey. Prairie chickens are comparatively numerous, and ducks of great variety are found upon all the lakes and sloughs in the township. Small white geese may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese visit the locality in lesser numbers during the same seasons. Curlews and many varieties of plover are numerous throughout the district. Antelope are occasionally seen, but are more numerous towards the wooded sections of the country, whilst other small animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 39.—This township is situated about 25 miles due south of Battleford, which is the nearest post office and supply station and about 75 miles northwest of Saskatoon, the nearest railway town. The old Battleford and Swift Current wagon trail passes through the westerly part of the township and affords ready access from the town of Battleford. The soil is clay and clay loam, and in places is very stony, and may be rated as second, third and fourth-class. It is, I consider, quite suited for the raising of general farm produce or for grazing land. The surface is chiefly open rolling prairie with no timber of any description, and very little scrub about the shores of some of the ponds or sloughs. Hay marshes are rather scarce, but over the whole surface a good growth of prairie grass was found. Both fresh and alkaline water are found upon this township in several small lakes and ponds, but neither is in very large quantities. The largest body of water is an alkaline lake of considerable area located at the southwest corner on section 6, but most of it is in the adjoining townships. Another much smaller alkaline lake lies on sections 18, 19 and 20, and small fresh water ponds are found on sections 4, 5, 9, 16, 29, 30, 31, 32 and 36. On section 36 is a fresh water lake extending into township 40, the second largest body of water in the township. The supply in the above mentioned lakes and ponds, although limited, appears to be permanent. No streams were found in the township, and I judge that very little if any, land in the township is liable to be flooded. The general indications are that the climate of this township is the same as those immediately adjoining it, that is, suited to admit of the raising of general farm produce or for ranching purposes. Summer frosts were not experienced during our survey of the township, but about the 9th of June, a few miles to the south of it, two summer frosts were experienced, which cut down many of the wild flowers and particularly the wild pea vines. It was said, however, by the old settlers of the district, that the season was a most exceptionally cold one. No fuel of any description is found in this township, the nearest available supply being on township 40, range 15, or the Red Pheasant Indian reserve. No coal or lignite veins are known to be in this locality. No stone quarries or minerals of value are known to exist in the township. The only large game is the antelope, although smaller animals such as badgers, foxes and wolverines are quite numerous. Ducks of many varieties are found upon all the ponds and lakes during their seasons of migration; geese are quite plentiful. Prairie chickens are scarce, there

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 16.

being not sufficient scrub and willows to afford them food and shelter.—*J. W. Tyrrell, D.L.S., 1903.*

Township 40.—This township, which is only a fractional one, being cut into on the north side by both the Red Pheasant and Mosquito Indian reserves, is situated about 20 miles due south of Battleford, the nearest post office and supply station. It lies about 75 miles northwest of Saskatoon which is the nearest railway town. The Battleford and Swift Current trail passes through the westerly part of the township and affords easy access from Battleford. The soil is chiefly heavy clay, containing many boulders, though in some places, sandy loam is met with. For the most part the soil of this township might be termed third and fourth class. It is probably more suitable for ranching purposes than for general farming, as the soil is very heavy and stony and rather too much broken for purposes of cultivation, excepting perhaps, on the southerly sections which are more level than the rest of the township. The surface is very rough and hilly, particularly in the northern parts. It consists entirely of open prairie lands with very little scrub and no timber, excepting here and there a few very small poplar or willows surrounding some of the sloughs. Several of these sloughs surrounded by willows and small poplar were found on sections 17 and 20, adjoining the trail. Another surrounded by a fringe of willows was found upon section 12, the north boundary of the section crossing the same. A good many small hay marshes lie in this township, in the valleys between the many hills, but they are mostly of small area. Several are quite close to the Battleford trail on sections 17 and 20, others were observed upon sections 12, 22, 27 and 28. Numerous small fresh water sloughs are found throughout the hilly sections. The largest body of water is situated at the southwest angle of the township and consists of a small fresh water lake covering in all, less than a quarter section. This lake is quite deep and affords a permanent supply of water, as also do many of the sloughs in the other parts of the township. No streams were found and very little if any, of the land of this township is liable to be flooded at any season of the year. No alkaline water was met with in the township. The general indications are that the climate in this locality is not unsuited to the production of most farm crops commonly grown in the Saskatchewan district. Two summer frosts were experienced about the 9th of June, but it is generally admitted by everyone in that part of the country that the summer was an exceptionally cold one. No fuel supply exists in this township but plenty of dry wood can be readily obtained either from the Red Pheasant Indian reserve or the northern part of township 40, range 15. No coal or lignite veins were noticed in this locality. No stone quarries or minerals of economic value are known to exist in this township. Antelope are occasionally found while badgers, foxes and prairie wolves are quite numerous. Ducks of many varieties are very numerous upon all the ponds and during their seasons of migration geese may be seen in great numbers. A few prairie chicken were met with, but these birds are much more abundant a few mile farther north towards the edge of the woods.—*J. W. Tyrrell, D.L.S., 1903.*

Township 49.—From Battleford, Saskatchewan, we reached the township by going by ferry across Saskatchewan river, thence northwesterly by Onion lake trail for some 15 miles, thence branch to northward by Jackfish trail, skirting the east side of Jackfish lake for another 15 miles, thence branch to northeastward by Birch lake trail, which, about half way across township 48, range 16, crosses swampy land and is difficult to follow, then after a sharp ascent of 300 feet to the top of a plateau the trail becomes better and leads into section 4, thence northeasterly across this township. The trail is said to continue on to Birch lake some 15 miles to the northeastward. In the northern sections the soil is sandy, gravelly clay. In the central and southern sections, loam and rich clay. It appears most suitable for stock-raising, but if cleared and drained it would probably yield good cereal crops in the southern portion. The township is very undulating with many marshes and many deep ravines,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 16.

is nearly covered with small poplar and a dense growth of underbrush and scrub. Probably 80 per cent of this township is so covered. There is no commercial timber to speak of, a few poplar and cottonwood trees in the northern part would occasionally measure 12 inches in diameter. As a rule the large poplar would average from 5 to 7 inches in diameter. Hay grows freely in the numerous marshes and also shows well on the open sides of the ravines, but it is generally of a coarse nature. Water is plentiful, fresh and fairly good, chiefly found in ponds and small lakes. The only creek that appears likely to flow during the summer months is the one in sections 7, 17, and 18. The land is not likely to be flooded. There are no falls or rapids, nor is there volume enough in any stream from which power could be obtained. From the 15th to the 30th of May it was very windy—chiefly from the north, northeast and northwest—warm days alternated with blizzards of snow and cold raw weather. June was dry, cloudy and moderately warm and there were frequent summer frosts during the night. Poplar is the only wood available for fuel. This is also apparently obtained in quantities from townships further north—near Birch lake. There are no indications of coal and no stone quarries or minerals. Game—duck, prairie fowl and plover. No deer were seen.—*Sydney A. Roberts, D.L.S., 1903.*

Township 50.—The Birch lake trail runs through the eastern part of the township. It is a poor trail and but little travelled. The soil is generally a rich dark loam rather stony and is suitable for grain and vegetables. The surface is slightly undulating with large flats of marshy land inclined to be muskeg. It is almost entirely covered with brush and scrub, with scrubby poplar up to 18 inches in diameter scattered about; also a quantity of fallen timber, killed by forest fires in former years. The only timber is poplar and a little spruce, varying in size up to 18 inches in diameter. It is distributed in clumps over the township. Quite a quantity of good hay could be got in dry seasons in the marshes that are this year under water. The water is fresh and apparently permanent in the small ponds and sloughs throughout the township. Jackfish creek runs along near the north boundary of the township. This year it is a rapid stream about 25 links wide and a foot deep. A good deal of the low land adjoining sloughs is flooded this year with a foot or two of water through the surrounding brush. There are no water-powers in the township. No signs of summer frosts were observed. The first ice appeared on September 4. Heavy rains fell all summer. Poplar is the only fuel; it is scattered all over the township. There are no stone quarries and no minerals. The game consists of a few deer and ducks.—*T. S. Gore, D.L.S., 1903.*

Township 51.—(East and west outlines.)—On the northeast corner Birch lake occupies about 700 acres, and is the only large body of water touching this township. Birch lake extends far to the northeast into range 15 and covers probably 15,000 acres. Along the eastern boundary the land is rolling, with numerous ponds and sloughs. There is much good arable land and many large patches of scrub and small poplar, not much building timber, but plenty of fuel for a long time to come. The northern part of the township is flat and broken with marsh and sloughs. To the southwest are beautiful prairie slopes, with a few clumps of poplar and some patches of light scrub. Jackfish creek drains the southern side of this township, which may be considered to be about second class for agricultural purposes.—*J. J. Dalton, D.T.S., 1903.*

Township 52.—(East outline.)—The northeast corner is covered by a lake which extends several miles further to the north. On the southeast several sections are broken by Birch lake and a deep marsh from it; then Midnight lake covers several sections in the southwest quarter. The first two lakes have good streams running from them into Midnight lake, and are about 50 links wide and two feet deep. The land is generally covered with scrub, much of which is very dense. Hay and grass are inferior and not abundant. The timber from Midnight lake supplies largely the settlers at Jackfish for building, the spruce being large and abundant but not sufficiently so for

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 16.

timber limits. There is nothing in this township to make it desirable for any special purpose.—*J. J. Dalton, D.T.S., 1903.*

(North outline.)—Across this range the ground is higher, and groves of pine 12 inches in diameter are frequently seen on the ridges. Section 31 is stony and covered with scrub poplar. In section 32 much of the timber, spruce and poplar is fire-killed. Some narrow belts of pine and spruce 10 inches in diameter and poplar eight inches in diameter still remain. Section 33 is heavily timbered with spruce and pine 10 inches in diameter. Section 34 and the western half of section 35 are covered with scrub and scattered poplar. Many boulders are also found on this section. The eastern half of section 35 and part of section 36 are covered with a large muskeg, three miles wide. This is followed by a belt of scrub poplar and bad windfalls one-half mile wide, reaching to the shore of Birch lake. The township corner falls within this lake. Two trails cross the base line in this range. The first one comes from a lake to the south and crosses fifteen chains east of the northeast corner of township 52, range 17, after which it possibly connects with the other, a well travelled trail which follows the southern shore of Birch lake, then taking a westerly direction crosses the base line 12 chains east of the corner of section 34, and appears to lead to the north end of Turtle lake. There is also a pack trail along the marshy western shore of Birch lake. The soil is a sandy loam with a subsoil of coarse sand, saturated with water.—*A. Saint Cyr, D.L.S., 1903.*

Range 17.

Township 35.—This township is situated about 70 miles west of Saskatoon and 50 miles south of Battleford, and is accessible from either place by fairly good wagon trails. The old Edmonton trail passes through the southern part of the township and the Battleford and Swift Current trail passes 5 or 6 miles to the east of it. Saskatoon is the nearest railway depot and Battleford the nearest post office and telegraph station. The soil varies considerably, ranging from sandy loam to clay loam and heavy clay, with clay subsoil, and seems well adapted for general farming purposes. The township is open, gently rolling prairie, which, however, is cut through in a northwesterly and southeasterly direction by two narrow valleys of from 75 to 100 feet in depth, which contain long, narrow, deep lakes of highly saline water. These lakes are rather remarkable in character, as they are not surrounded by broken or hilly country, but rather have the appearance of great, deep canals cut through the comparatively level prairie country, and being so narrow that they may be in many places approached to within a few yards before one is aware of their presence. Upon the southerly banks of these long, narrow lakes above described, there is a narrow fringe of small poplar trees, from 2 to 3 inches in diameter and from them a very limited amount of wood may be obtained suitable for fuel only. Few small natural hay marshes exist in this township, and none of any large extent, those noted being upon sections 8, 9, 16 and 32. The water in the two long, narrow lakes is very highly saline and unfit for drinking purposes. A third smaller lake of similar water lies in sections 10 and 11, and these three represent the only large bodies of water upon the township. Small fresh water sloughs, however, were found on sections 4, 5, 8, 9, 12, 16, 17, 24, 25, 29 and 32, and these though small appear to be of a permanent character. No water-power exists in the township. A very limited amount of fuel is found upon the steep southern banks of the lakes, where a fringe of young poplar is growing. Rather a remarkable feature in connection with the occurrence of these poplar is that they are all found upon the south banks of the lakes, not a tree upon the north banks, where upon the warmer, more sunny slope they might be expected to grow. In addition to the very limited amount of fuel found upon the shores of the lakes in this township the next most convenient supply exists in 'the 60-mile bush,' in township 36, range 16. No minerals

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 17.

of economic value or stone quarries are known to exist upon the township. Prairie chickens are comparatively numerous. Ducks of great variety are found upon all the lakes and sloughs in the township, while white geese may be seen in great numbers during the spring and autumn seasons, whilst the larger geese also visit the locality during the same seasons, but in lesser numbers. Curlews and many varieties of plover are numerous throughout the district. Antelope are occasionally seen, although these are more numerous towards the wooded sections. Other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate see that given for township 35, range 16.—*J. W. Tyrrell, D.L.S., 1903.*

Township 36.—This township is situated about 70 miles due west of Saskatoon and 45 miles south of Battleford, and may be reached from either place by fairly good wagon trails. Saskatoon is the nearest railway station, but Battleford is the most convenient post office and telegraph station. The old Battleford and Swift Current trail passes through the township immediately to the east, and is only 4 or 5 miles distant. The soil consists chiefly of clay, which in many places, especially towards the north, is highly alkaline. The proximity of the township to the foul-smelling waters of Whiteshore lake renders it undesirable for general farm settlement, but it is not unsuited for grazing purposes. The surface is open gently rolling prairie, much broken towards the north by the irregular shore line of Whiteshore lake. No timber or scrub of any description is found. The township contains few natural hay meadows of any extent. The whole surface is, however, covered by a fairly good growth of prairie grass. This township, like township 36, range 16, is well supplied with bad water, sections 24, 25, 26, 28, 29, 30, 32, 33, 34, 35 and 36 being wholly or partially covered by the foul-smelling waters of Whiteshore lake. The water of this lake is highly impregnated by hydrous sulphate of sodium and small percentages of magnesium sulphate and sodium chloride, and so strong is the odour that arises from this lake that with a favourable wind it may be scented for a distance of two or three miles. Besides this large lake, other smaller ones lie upon sections 27 and 28, and a few small fresh water sloughs are also found on sections 8, 9, 16, 17, 20, 21 and 26. These latter, as well as the larger lakes, are all of a permanent character. No water-power exists in the township. No fuel of any description is found upon this township, the nearest available supply being in 'the 60-mile bush' upon township 36, range 16. No minerals of economic value or stone quarries occur in this township. Prairie chickens are comparatively numerous, and ducks of great variety are found upon all the lakes and sloughs in the township. Small white geese may be seen in great numbers during the spring and autumn seasons, and the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of plover are quite numerous. Antelope are occasionally seen, but they are more numerous towards the wooded sections of the country. Other smaller animals, such as badgers, prairie wolves, foxes, skunks and gophers are very numerous.—*J. W. Tyrrell, D.L.S., 1903.*

Township 37.—This township, which is situated about 70 miles west of Saskatoon and 40 miles south of Battleford, may be reached by fairly good wagon trails from either place; but the distance from Battleford being much less than that from Saskatoon, and the trail being more direct and in better condition, it is by far the more convenient supply station. The old main trail from Battleford to Swift Current passes about 4 miles to the east of the township, and a branch from this old trail passes diagonally across the northwesterly part of the township. The soil is light, being composed chiefly of sand and sandy clay with clay subsoil, and should be well suited for general farming purposes, and especially for the raising of root crops. The surface is open gently rolling prairie, nearly level in some localities, with no timber or scrub of any description upon it. There are several small hay marshes in various parts of the township. One was observed on section 2, another on section 16, one upon section 17 and another on sections 19 and 30. The quantity of hay in these marshes is not

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 17.

very great, and the quality is the same as that commonly found in all the hay marshes of the district. The only large body of water in the township is found upon sections 4 and 5. It is a portion of a long lake of exceedingly foul water. There are a number of small fresh water sloughs on sections 2, 4, 5, 8, 9, 16, 17, 19, 30, 31 and 32. No water-power exists in the township. No fuel can be obtained in the township, but a convenient supply is available in 'the 60-mile bush' in township 35, ranges 15 and 16. No stone quarries or minerals are known to exist in this township. Prairie chickens are comparatively numerous, while ducks of great variety are found upon all the lakes and sloughs. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen, although these are more numerous towards the wooded sections of the country, while other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 38.—From Battleford, at the beginning of May, I came out by the government road to the village of the Stony Indians. It was very wet in places but we had no difficulty in pulling through. From the village we took across north of Stench lake, but a much simpler route would be to keep along the government road farther south and cut across west, striking below Goose lake. The cut thus taken should be comparatively level. Soil is inclined to be sandy and stony, but if picked would be found suited for farming. Surface is all open undulating prairie. There is no timber nor hay in quantity. Water in smaller bodies is fresh and abundant. Goose lake is alkaline. The water supply is sufficient and permanent. On the westerly shores of Goose lake there is a fresh cold spring. There are no streams nor land liable to flood and no water-powers. Frost came about the 2nd of September. There were late snows in May and a rather damp season of drizzling rain. The nearest fuel is wood obtained from the neighbouring Indian reserves. No stone quarries or minerals were noticed. Geese, ducks and foxes were the game mostly seen.—*S. James, D.L.S., 1903.*

Township 39.—From Battleford I used the government road to the village of the Stony Indians. It was very wet in places, but we had no great difficulty in pulling through. From the village we took across north of Stench lake to township 40, range 17, but a much simpler route would be to follow the government road farther south and cut across west striking the more level part of township 39. The northerly and westerly portions of the township are very stony and hilly. But the hills have larger slopes than in township 40. Sections 1 to 14 are comparatively level and not so stony. These sections would make farms but the rest of the township is so hilly and stony that ranching would be the only suitable use for it. Here the many sloughs grow grass that comes in during the dry season when the grass on the hills is all dried up. There is absolutely no timber or scrub. There is no hay. Stench and Goose lakes are alkaline. The other bodies are fresh or nearly so. The supply is sufficient and permanent and there are also a large number of temporary sloughs. No land is liable to flood and there is no water-power. We had a late windy spring and frosts in first part of September, a season of drizzling rain. There is no fuel on the township; nearest wood is on the Indian reserve. No stone quarries nor minerals were seen. Duck and a few geese were noticed.—*S. James, D.L.S., 1903.*

Township 40.—From Battleford I used the government road to the village of the Stony Indians. It was very wet in places, but we had no great difficulty in pulling through in some shape. From the village we took across country to Stench lake and in the latter part of the journey found any possible route to be very crooked and hilly, both on account of the abrupt hills and the number of sloughs. The soil is rather

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 17.

sandy and covered with stones and unsuited for cultivation. Surface very hilly, giving the appearance of a choppy sea. There are a few flat stretches to the north and west of Stench lake and to the north of Horse lake. There is no timber nor scrub and no hay. Stench lake is strongly alkaline. The other waters are fresh and there are several large permanent bodies and very numerous temporary ones. There are no streams nor land liable to flood. Snow fell for two or three days late in May and to a considerable depth (6 inches) but was soon melted in the sun. No fuel, stone quarries or minerals exist. Fox, coyotes and ducks were seen. Stock roam over the country and are able to get good grass where the many inequalities of the ground have held water in the spring, otherwise the grass is very poor.—*S. James, D.L.S., 1903.*

Township 41.—From Battleford the nearest route is by the government road or trail, which passes the Indian reserves and village of the Stonies to the east of the township. The road is in bad condition in wet weather and has some very bad wet spots, which, however, can be avoided. The soil is well adapted for farming purposes, but the land is broken by many sloughs, especially in spring. No scrub bush. No timber. No large hay flats. The water of the sloughs is fresh, and many bodies are permanent, as the five sections surveyed are lower than the surrounding country and the western ones may, therefore, be liable to flood. No water-power is available in the township. A heavy snowfall at the end of May was supposed to be a most unusual thing. The first frost came about 2nd September and was heavy. It was altogether rather a wet drizzling season, too cold for many mosquitos and quite windy. The fall was early, but no severe weather developed until after survey operations had been completed in October. Nearest fuel was obtained from Mosquito Indian reserve, but was of poor quality. No stone quarries, no minerals. Turkeys and ducks were seen.—*S. James, D.L.S., 1903.*

Township 49.—From Battleford, Saskatchewan, we went by ferry across the Saskatchewan river, thence by Onion lake trail for some 15 miles, thence branch to north-eastward to Jackfish, thence by trail leading round east side of Jackfish lake, thence either northeasterly for three or four miles to the eastern side of this township by a trail leading to Birch lake or else from Jackfish northeasterly and northerly for about four miles to the western side of this township by the trail leading to Midnight lake. The bridge across Jackfish creek is unsafe for loaded wagons. The soil is chiefly a light gravelly sandy clay. In the southwest corner there is swampy low-lying land with black sandy loam. The township is apparently suitable for stock-raising, being very undulating, much broken by hills and ravines and about 70 per cent covered with scrub and young poplar, excepting in the southwest corner where the low-lying land is chiefly open grass and flat. There is no commercial timber to speak of. There are a few spruce up to 15 inches in diameter, a few poplar and cottonwood up to 10 inches in diameter in one of the ravines, otherwise the trees are all small poplar averaging from two to four and five inches. Wild hay grows freely in the swamps, but the general average is of a coarse nature. Water is plentiful, fresh and good, excepting in the southwest corner where a few ponds are impregnated with alkali. The larger swamps had ponds of good water in them. Jackfish creek, one chain in width, about six feet in depth, carries a good volume of sweet water and flows throughout the year, but the stream is sluggish and the land in its vicinity is liable to be flooded. There is so little fall in this creek (the only one of any size) that I should judge it would be difficult to obtain any power from it. The weather was very dry in June, but numerous heavy hail and thunderstorms came in July, with copious rain. There were several summer frosts in July. There is no coal; only small poplar and cottonwood; fuel of somewhat larger poplar is obtained from townships further north. No stone quarries or minerals were observed. One small band of red deer, probably wapiti, were seen in July. There were plenty of duck, plover and a few prairie fowl. From information it would appear that moose are occasionally shot by the Indians, also rabbits are snared. Remarkably

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 17.

good vegetables were found growing in Louis Bourrit's garden in section 8, and he apparently had no difficulty in growing oats and roots in the bottom lands near his house.—*Sydney A. Roberts, D.L.S., 1903.*

Township 50.—The trail from Jackfish settlement to Midnight lake runs through this township from south to north. It is a good road except in wet seasons, when it crosses a good many boggy places. The soil is generally a good clay loam and is suitable for any ordinary products of the country. It is rather stony, however. The surface is all covered with poplar and willow scrub, and in many places poplar up to 10 inches in diameter. It is high and rather flat land, very soft and wet on the surface, broken on the west side of the township by ravines running into Jackfish creek. There is a large amount of fallen timber caused by fires. The only timber, except a little spruce in some of the ravines, is small poplar which is scattered all over the township. There is no hay land, though the grass is long and thick; it is interspersed with clumps of willow. The water in the sloughs and ponds is fresh but in dry seasons there would be very little. Jackfish creek runs through the northern and western parts of the township. This year it is about 25 links wide and from 2 to 3 feet deep and runs three or four miles per hour. There is said to be very little water in it after a few dry seasons. It contains good fresh water. There are no water-powers in the township. The climate is variable, very wet this year and cool, but no indications of summer frosts. The only fuel is poplar, scattered about the township. There are no stone quarries and no minerals. There was very little game seen, but there are a few deer.—*T. S. Gore, D.L.S., 1903.*

Township 51.—(North, east and west outlines.)—This township is altogether different in its nature from the one to the north. It is generally rolling prairie with numerous bluffs of poplar and patches of scrub and is suitable for general farming. Poplar is abundant for fuel and building timber and can be found conveniently. Maiden lake is the only body of water of any extent and occupies about 1,400 acres of sections 33, 34, 27 and 28. The northern part is broken largely with sloughs, but the south and southeastern parts are especially inviting for a person of agricultural tastes, with its beautiful slopes, occasional small ravines, excellent black loamy soil and its varied subsoil. This is altogether an agricultural township. Hay may be secured along the sloughs in the northern part of the township.—*J. J. Dalton, D.T.S., 1903.*

Township 52.—(East, west and south outlines.)—This township is cut on the west boundary by a lake which covers part of sections 12, 13, 18 and 19, destroying greatly the western halves of these sections. On the southeast we have what is known as Midnight lake, and in fact with the lake and marsh about five miles of the eastern boundary is taken up. This lake extends nearly to the western boundary but is finally drained by the southern branch of the Turtle lake river. Maiden lake cuts into the south boundary of this township for about one and three-quarter miles. The northern part of the township is largely ridges and muskegs with a few ponds and sloughs. A great area is covered with dense thickets of small poplar. There are several spruce bluffs and a few jackpine in the northeastern corner of the township. Hay may be secured in the vicinity of the lakes but nowhere else in quantity.—*J. J. Dalton, D.T.S., 1903.*

(North outline.)—Across this range lies a country of marshes and tamarack swamps, separated by hills of no great elevation but covered with bad windfalls. The only timber is small poplar and balm of Gilead on the high ground, while tamarack and a few spruce are scattered at intervals through the low lands of sections 31, 32, 33 and 34. At thirty chains east of the northeast corner of section 34 begins a belt one-half mile wide of spruce ten inches in diameter, intermixed with poplar eight inches in diameter. Here the windfalls are again met with and continue through section 36 to the northeast corner of the township. There is no trail crossing this bad tract of country. The ground slopes towards the marshes into which flow many small streams. Only a few unimportant streams flowing between marshes were crossed by

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 17.

the base line. South of the line the country is open and slopes towards a deep depression in which are large bodies of water, running parallel to the base line. The soil is a black sandy loam, from four to ten inches deep, with a subsoil of clay or clay and stones. The hills are stony and gravelly.—*A. Saint Cyr, D.L.S., 1903.*

Range 18.

Township 35.—This township is situated about 80 miles west of Saskatoon, and about 60 miles south of Battleford, and may be reached from either of these places by fairly good wagon trails on what is known as the old Edmonton trail from Saskatoon, passing close to the southerly boundary of the township. Saskatoon is the nearest railway depot and Battleford the nearest post office and telegraph station. The soil is sandy clay with clay subsoil, but along the north boundary it is of a heavier character, and consists of heavy clay which might be suited either for farming or grazing purposes. The surface is open rolling prairie, which, however, is cut through by a number of parallel ravines, from 50 to 100 feet in width, which contain long narrow lakes of extremely saline water. These valleys have a northwesterly and southeasterly trend, and are of a remarkable character, having somewhat the appearance of great canals cut through the level prairie country. There is on the south banks of some of these salty lakes a very limited quantity of small poplar timber, not sufficient for building purposes, but of a size and quantity useful as fuel. 'The 60-mile bush,' in township 35, range 16, will provide a more extensive supply. No natural hay marshes worth mentioning were found upon the township, but the whole surface supports a fairly good growth of grass. All of the ten lakes which lie in this township contain extremely bitter saline water, quite unfit for drinking purposes. These were found in sections 2, 3, 10, 16, 17, 18, 20, 21, 22, 25, 26, 29, 30, 32, 33, 34 and 35. Besides these lakes, however, a few small fresh water sloughs were found, these being upon sections 1, 4, 5, 6, 10 and 13. No minerals of economic value or stone quarries are known in the township. Prairie chickens are comparatively numerous, and ducks of great variety are found upon all the lakes and sloughs. Small white geese may be seen in great numbers during the spring and autumn seasons, whilst the large geese also visit the locality in lesser numbers. Curlews and many varieties of the plover family are quite numerous. Antelope are occasionally seen, but they are more numerous towards the wooded sections of the country, whilst other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 36.—This township is situated about 80 miles due west of Saskatoon, and 45 miles south of Battleford, and may be reached by wagon trail from either of those places. The old main trail from Saskatoon to Swift Current passes about 10 miles to the east of the township, but a branch passes diagonally across the northwesterly part of the township, and therefore affords the most convenient access to and from Battleford, which is the nearest post office and telegraph station. Saskatoon being the nearest railway depot. The soil is chiefly clay loam or heavy clay, although on some of the central sections of the township a lighter sandy loam is found. The township is chiefly suited for farming purposes, more especially the raising of grain crops, such as wheat or oats. The surface is open gently rolling prairie, although on several sections hills of from 50 to 100 feet occur. It is very little broken by lakes or ravines. The largest bodies of water lie on sections 5 and 6 and upon 25 and 26. There is no timber of any description. There is a considerable quantity of marsh hay, the largest meadow being upon sections 26 and 27, which covers about 150 acres. Other smaller hay marshes are on sections 5, 15, 16, 21, 25, 27, 28, 33, 34, 35 and 36. Unfortunately, as on most of the other townships in this locality, the largest bodies of water are unfit

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 18.

for domestic use. The lake occupying a southwesterly position in the township, and covering portions of sections 5 and 6, is composed of extremely bitter saline water, and the only other lakes of any size occurring upon sections 25 and 26 are also very alkaline in character. Numerous fresh water sloughs, however, exist in various parts of the township, although many of them become dry during the dry seasons of the year. During the month of August, when our survey of the township was made, fresh water was found in sloughs upon the following sections: 5, 15, 16, 21, 25, 26, 27, 33, 34, 35 and 36. No water-power exists in the township. No fuel of any description is found upon the township, the nearest available supply being in 'the 60-mile bush,' upon township 35, range 16. No coal, lignite veins or stone quarries are known to exist in this locality, nor any minerals of economic value. Prairie chickens are comparatively numerous, and ducks of great variety are found upon all the lakes and sloughs. Small white geese may be seen in great numbers during the spring and autumn seasons, whilst the larger geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of plover are quite numerous throughout the district. Antelope are sometimes seen, but are more numerous towards the wooded sections of the country, whilst other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 37.—This township which is situated about 80 miles west of Saskatoon and 40 miles south of Battleford, may be reached from either of these places by fairly good wagon trails. Although Saskatoon, being on the line of the Canadian Pacific Railway, is the more advantageous supply station, Battleford being very much nearer is much the more convenient market town, and is also accessible by a better trail, namely, that leading from Battleford to Swift Current. The soil is clay and clay loam, and should, I judge, be suited for general farming purposes. The surface is open rolling prairie, with a few hills surrounding the large lakes within the township. The larger of these lakes lies within sections 16, 21, 22, 27 and 28, and the other upon sections 23, 10 and 11. In this latter lake there is a very conspicuous island covered with a dense growth of poplar which, however, because of its position in the lake, and the soft muddy character of the lake shore and bottom, it is almost impossible to reach. The isolated condition of the island no doubt accounts for the existence of the growing timber upon it, and would seem to indicate that similar forests might grow extensively throughout the country, were it not for the frequent visitations of prairie fires. This was the only timber found on the township, and is of little importance and not easily reached. The township is particularly favoured with natural hay meadows or marshes. A very large one lies upon sections 24 and 25, whilst others were found on sections 8, 9, 22, 23 and 27. Unfortunately the two fine large lakes within this township contain exceedingly bad water, the larger one occupying a central position in the township being exceedingly saline and bitter. The water of the smaller lake is strongly alkaline and unfit for drinking purposes. The only fresh water which we were able to find was in the grassy sloughs or hay marshes; however, by digging wells in these sloughs we were able to obtain a sufficient supply of good, fresh water. No water-power exists upon the township. The only fuel supply is that upon the island above referred to. A more convenient source is 'the 60-mile bush,' upon township 35, ranges 15 and 16. No coal is known to exist in the locality. No stone quarries or minerals of economic value are known to exist in this township. Prairie chickens are comparatively numerous, and ducks of great variety are found upon all the lakes and sloughs. Some white geese (wavies) may be seen in great numbers during the spring and autumn seasons, whilst the large geese also visit the locality in lesser numbers. Curlews and many varieties of plover are quite numerous throughout the district. Antelope are occasionally seen although these are more numerous towards the wooded sections of the country,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 18.

while other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 38.—From Battleford either the government road or the trail to Tramping lake could be taken. One is about the same as the other. In spring there might be difficulties by either route in the wet places, and in both there is a steep ascent to be made. The government road would probably be shorter, but to a stranger the other would be better because of two sets of pits, one directly in the trail, the other immediately to the right. The latter is a township corner, the northeast corner township 40, range 19. The soil is suitable for cultivation wherever the nature of the subsoil and the classing indicates the better qualities. The surface is prairie, with no scrub, only sufficient shrubs to make pickets, and no timber whatever. No hay in quantity is found. Aroma lake is alkaline. Horse-hoof lake is nearly fresh. The supply of water is fairly sufficient and permanent. There are springs in the ravines along the east shore of Aroma lake. There are no streams or land liable to flood and no water-power. A heavy snowfall came at the end of May, but was not a usual thing. First frost was about September 2, and was a heavy one. Rather a wet drizzling season, too cold for many mosquitoes. The nearest fuel obtainable was from the Stony Indian reserve. No stone quarries nor minerals were found. Ducks are found and some turkeys. Antelope frequent the ravines cutting into Aroma lake.—*S. James, D.L.S., 1903.*

Township 39.—From Battleford the trail to Tramping lake was found convenient. There is a steep ascent a little out of Battleford and in wet weather the trail becomes difficult, but otherwise it is satisfactory as an unimproved trail could be. There are two sets of pits directly on this trail, the latter set being at the northwest corner township 40, range 18. These form a useful guide to a stranger. The soil of this township is not everywhere suitable for farming, but could be used then for ranching. The surface is all prairie and only enough scrub for survey pickets. There is no timber and no hay in quantity. The water is both fresh and alkaline. The supply of fresh water is sufficient and permanent. There are no streams nor land liable to flood and no water-powers. There was a heavy snowfall at the end of May, but not supposed to be a usual thing. The first frost came about September 2, and was heavy. It was altogether a wet drizzling season, too cold for many mosquitoes and quite windy. The fall was early but no cold weather developed until after our work was finished. Nearest fuel obtainable was from Mosquito Indian reserve. The wood there is not any too good either. No stone quarries or minerals were seen. Ducks, turkey and antelope were all seen. The antelope frequent Aroma lake. To the east of Aroma lake is at least one spring not far from the shore and about one half mile up in the township. There is an ideal spring of ice cold water on the shore of Coldspring lake on section 16 of township 39, range 19, but it is very near the boundary and accessible from section 18 of this township. The spring is practically unlimited in its flow and wells up in several places, forming quite a marsh at the edge of the lake.—*S. James, D.L.S., 1903.*

Township 40.—From Battleford the trail to Tramping lake touches the northwest angle of this township. There is a steep ascent a little out of Battleford and in wet weather the travel becomes difficult, but otherwise it is as satisfactory as an unimproved trail could be. The set of pits for the northwest corner of this township lie as nearly on the trail as could be without actually occupying it and cannot but be observed by anyone using the trail. The soil is not very suitable for farming, not being of the requisite depth of loam while the surface is rather too hilly, though open. As a township it averages between a very hilly one like township 40, range 17 and a fairly level plain. The westerly half including the prominence known as 'Spy hill' is the rougher half. The easterly half has some hills, but each hill is isolated and surrounded by level ground. Only enough scrub for survey pickets. No timber. No

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 18.

large hay flats. On section 35 are a large number of irregular areas or sloughs producing good grass and hay. The water of the sloughs is fresh and largely permanent although there are also some large sloughs, surrounded by small willows, that dry up. A good spring was found on section 3. Sections 34 and 35 may be liable to flood. No water-power. A heavy snowfall at the end of May was not supposed to be a usual thing. The first frost came about the 2nd of September and was heavy. It was altogether rather a wet drizzling season, too cold for many mosquitoes on the prairie and quite windy. The fall was early, but no severe weather developed until after the survey operations had been completed in October. Nearest fuel was obtained from Mosquito Indian reserve, but was of poor quality. No stone quarries. No minerals. Turkeys and duck were seen.—*S. James, D.L.S., 1903.*

Township 41.—From Battleford the trail to Tramping lake affords ready access to this township. The township is easily picked up from the trail, there being several sets of pits near the trail, and so prominent as to not escape observation by a person passing along the trail. The soil is suited for farming and the surface is not too hilly and is open. The scrub is only of requisite thickness for survey pickets. No timber. No large hay flats. There exists a large slough, said to have grown hay, on sections 14 and 23. The water in the sloughs is fresh and largely permanent. Sections 14 and 23 may be liable to further flooding if the slough encroaches still further on the dry area, but it seems rather that in dry seasons the slough might disappear. No water-powers. A heavy snowfall at the end of May was experienced, but it was not supposed to be a usual thing. The first frost came about September 2 and was severe. The season altogether was rather damp, and with the winds made it rather unpleasant. The fall was early, but got no headway until after our survey operations had been completed. The nearest fuel was obtained from the Mosquito Indian reserve to the east about ten miles. It was of poor quality. No stone quarries. No minerals. The game consisted of turkeys, duck, partridge and prairie chicken.—*S. James, D.L.S., 1903.*

Township 49.—Turtle lake trail crosses the southwestern part of the township and is a fairly good road, though but little travelled. It branches out from the Onion lake trail at the southwest end of Jackfish lake. The eastern part of the township is inclined to be sandy, but the western part is generally a good, dark sandy loam, suitable for grain and vegetables. The surface is very broken and hilly, all except a few sections in the southwest corner, and that part is much cut up with sloughs and ponds. The hills on the west side of Jackfish creek are cut by numerous steep ravines, sometimes nearly 200 feet deep, from many of which flow small spring creeks. About one-fourth of the land is covered with small poplar and poplar and willow scrub, the eastern half having the most open prairie. The timber consists of small poplar from two to eight inches in diameter, scattered throughout the township. The water is generally pretty fresh, though there is a little alkali in some of the ponds. Jackfish creek runs through the easterly part of the township. It is about 35 links wide and from one to six feet deep, with a current from two to six miles per hour. No flooding is liable to occur except of adjacent hay meadows. There are no water powers in the township. It has been very wet this summer, but there have been no frosts. The only fuel is small poplar timber scattered about. There are no stone quarries and no minerals. The game consists of ducks, prairie chickens and a few deer. The grass is plentiful and there is plenty of hay of good quality scattered throughout the township.—*T. S. Gore, D.L.S., 1903.*

Township 50.—This township is reached by the trail which runs north from Jackfish through the middle of the township. The soil is good clay and sandy loam, but is stony and only suitable for growing vegetables and grain in a small way. The surface is rolling and generally covered with willow and poplar scrub, brush and small poplar trees, with some stretches of open prairie. It is considerably broken with deep ravines. The timber is poplar, from 2 inches to 10 inches in diameter, scattered all

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 18.

about, but thicker on the east half of the township. There is not a great quantity of hay, but there is a little scattered about in small patches. There is a thick growth of shorter grass with vetches everywhere. There is very little water in this township, and in a dry season I fancy there would be none except in Jackfish creek, which runs through the southeast part of the township. This creek is about 25 links wide, 18 inches deep, and runs about five miles an hour. It has good fresh water. There is none of the township liable to be flooded. There are no water-powers. The rainfall is abundant and no indications of summer frost have been observed. The only fuel is small poplar scattered about the township. There are no stone quarries and no minerals. No game seen, but there are said to be a few deer. This township is best suited for summer grazing.—*T. S. Gore, D.L.S., 1903.*

Township 51.—(East and west outlines.)—This township is a good farming country with good rolling surface and plenty of firewood, a good deal of building timber and good water, a fair depth of black loam soil and much prairie. Hay is plentiful on the southwesterly quarter of this township. Through the country described above there is no alkaline water, stone quarries, coal, lignite nor petroleum. Water-powers might be available on either branch of Turtle lake river as these streams are very rapid in places. A few deer, one bear and a small number of game birds were all the game seen. The south branch of Turtle lake river may be forded on the boundary of range 19 and also about one-half mile east of the large lake in township 52, but is scarcely fordable at any other point.—*J. J. Dalton, D.T.S., 1903.*

Township 52.—(East and west outlines.)—The northern part is as rough and uninviting as that of township 52, range 19. The south branch of Turtle lake river in this township expands into a lake about three miles long by two and one-half wide, extending east of the line into range 17 about 50 chains, then spreading west over sections 24, 13, 12 and others. South of the lake there is good hay and grass land, deep loamy soil and rolling prairie with clumps of poplar and patches of scrub. Timber is abundant; on the north shore of the lake it is especially so.—*J. J. Dalton, D.T.S., 1903.*

(North outline.)—Turtle lake covers about one-third of section 31. On the eastern side of this lake the country is stony and much more open. It rises gradually from the lake shore and is covered at intervals with scrub which extends through sections 32, 33 and most of 34, where the country becomes marshy and poplar bush appears. In many places north of the line and not more than a quarter of a mile distant are belts of spruce, none of which, however, is over twelve inches in diameter. Sections 35 and 36 are mostly timbered with poplar and small clumps of spruce with heavy underbrush. Here the country becomes very wet. The soil, which is generally stony, is a sandy loam six inches deep with a subsoil of clay and stones. An old cart trail following close to the lake shore crosses the base line ten chains west of the quarter section post on the north boundary of section 31; while two very old trails leading probably directly across country to the upper end of the lake, cross within ten chains of the northeast corner of section 33 and on either side of it.—*A. Saint Cyr, D.L.S., 1903.*

Range 19.

Township 35.—This township is situated about 55 miles west of Saskatoon and 50 miles south of Battleford, and may be reached from either place by fairly good wagon trails, the old Edmonton trail from Saskatoon passing in an easterly and westerly direction across the southern part of the township. Battleford is, however, the more convenient post office and telegraph station, being considerably nearer than Saskatoon. The northerly sections of this township are chiefly composed of stony clay soil, but the remainder of the township is of a lighter character, consisting of sandy soil and

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 19.

sandy loam which is probably equally well suited for farming and grazing purposes. The surface of the township like others immediately to the east of it is open rolling prairie, cut by several narrow parallel ravines 50 to 100 feet in depth. These ravines contain long narrow lakes of very bitter saline water quite unfit for domestic use. Upon the banks of some of these lakes a small quantity of poplar bush and willow scrub is found, but so insignificant in size and quantity as to be of little value. Nothing worthy of the name of timber is found upon the township. No hay marshes of any consequence are found. Seven lakes of considerable extent were found, all of them containing very bitter saline water, quite unfit for domestic use; however, a few small fresh water ponds exist, these being upon sections 1, 2, 15, 24, 25, 26 and 30, and all of them are of a permanent character. No water power exists in the township. A very limited quantity of firewood might be obtained from the banks of some of the salty lakes, but for any more extensive supply the nearest available is that in the '60-mile bush' on township 35, range 16. No rock in place or mineral of economic value was seen upon the township. Prairie chickens are quite numerous. Ducks of great variety are found upon all the lakes and sloughs. Small white geese (wavies) may be seen in great numbers during the spring and autumn seasons, whilst the large geese (brant) also visit the locality in lesser numbers. Curleys and many varieties of plover are quite numerous throughout the district. Antelope are occasionally seen but are more numerous towards the wooded sections of the country, whilst other smaller animals, such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 36.—This township is situated 85 miles due west of Saskatoon, and 45 miles southeast of Battleford, and is not difficult of access from either place, as fairly good wagon trails from both of the above mentioned towns pass within a short distance of the township. Battleford being much the nearer town is the most convenient post office and telegraph station. The soil is chiefly a heavy clay although in a few places a lighter sandy clay is found. The township is, I judge, best suited for general farming purposes. The surface is chiefly open rolling prairie, although several of the more central sections are decidedly hilly, the most hilly sections being numbers 11, 14, 15, 16, 17, 28 and 29. No timber or scrub of any description is found upon the township. A few small scattered hay marshes are found, but none of any large extent. A good growth of prairie grass, however, occurs all over the township. The township is well supplied with both fresh and alkali water as it contains a number of small lakes fairly well distributed over its surface. The largest of these lakes contains bad water and occupies portions of sections 28, 29 and 33, covering in all probably 200 acres. Other small alkali lakes occur upon sections 4, 5, 15, 16, 17 and 21, but several fresh water lakes also occur in the following localities: sections 4, 5, 9, 11, 12, 14, 16, 21, 23, 24 and 32. These lakes are all of a permanent character. No water-power occurs. No fuel of any description is found, the nearest available supply being in 'the 60-mile bush' upon township 35, range 16. No coal or lignite beds are known to occur in this locality. No stone quarries occur, and no minerals of economic value are known of here. With regard to the occurrence of game in this locality it may be mentioned that prairie chickens are comparatively numerous. Ducks of great variety are found upon all the lakes and sloughs. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen although these are more numerous towards the wooded sections of the country, whilst other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 19.

Township 37.—This township is situated about 85 miles west of the town of Saskatoon and about 40 miles southwest of the town of Battleford and may be reached from either of these places by wagon trails; although Battleford being much the nearer of the two is the preferable market town and much the more convenient post office and supply station. The soil is chiefly a sandy clay and clay loam, and is, I judge, suited for general farming purposes. The surface is open, gently rolling prairie, with no trees or shrubs of any description. No timber of any description is found. Few hay marshes of any note were found, although the whole township is well covered with a good growth of prairie grass. One small hay marsh was found on section 2. The largest lake found upon the township lies in sections 5 and 8, and is in the form of a long, narrow slough, containing strongly alkali water. Situated precisely in the centre of the township upon sections 15, 21 and 22, there is, however, another long narrow lake containing exceedingly good water, and this forms the chief fresh water supply. Several other fresh water sloughs are found in sections 1, 2, 23, 24, 25, 27, 28, 31, 32 and 33. These all appear to furnish permanent water supply. There is no water-power in the township. No fuel of any description is found, the nearest available supply being in 'the 60-mile bush,' on township 35, ranges 15 and 16, or upon township 40, range 15, adjoining the Red Pheasant Indian reserve. No coal is known to exist in this locality. No stone quarries are found upon the township, nor any minerals of economic value. Prairie chickens are comparatively numerous and ducks of great variety are found upon all the lakes and sloughs. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen although these are more numerous towards the wooded sections of the country, whilst other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 38.—This township is situated about 90 miles westerly from Saskatoon, and about 35 miles southwest from Battleford, and is most readily accessible from the latter place, which is the nearest post office and telegraph station, Saskatoon being the nearest railway depot. The soil of the central and southerly part of this township is chiefly heavy clay, with clay loam in some places, but the northerly sections of the township are of a very sandy and gravelly nature, and of little value either for farming or for pasturage. The surface is gently rolling prairie, very level in places. A deep ravine of from 75 to 100 feet cuts across sections 3, 4, 9 and 8, and another small ravine cuts through the northerly tier of sections. No timber of any description is found upon the township. A considerable quantity of hay is found in the central and more southerly sections, but the northern part is very barren, the soil being composed of sand and gravel. No large bodies of water are found, but a small fresh water stream flows through the ravine above mentioned upon sections 8, 9, 4 and 3, whilst other small fresh water ponds were found upon sections 5, 6, 7, 12, 13, 18, 19, 20, 22, 23, 24, 27 and 32. As these ponds were observed by me during the driest season of the year, it is reasonable to assume that they form permanent water supplies, although none of them are in themselves of any great volume. No water-power exists in this township. No fuel of any description is found upon the township, the nearest available supply being upon township 40, range 15, or in 'the 60 mile bush' on township 15, ranges 15 and 16. There are no stone quarries or minerals of economic value. Prairie chicken are comparatively numerous, and ducks in great variety are found upon all the lakes and sloughs. Small white geese or wavies may be seen in great numbers during the spring and autumn seasons, whilst the large brant geese also visit the locality in lesser numbers during the same seasons. Curlews

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 19.

and many varieties of the plover family are quite numerous throughout the district. Antelope are occasionally seen, although these are more numerous towards the wooded sections of the country, whilst other smaller animals such as badgers, prairie wolves, foxes, skunks and gophers are very numerous. For description of climate, see that given for township 35, range 16, west of the third meridian.—*J. W. Tyrrell, D.L.S., 1903.*

Township 39.—The trail from Battleford to Tramping lake passes through this township. There is a steep ascent a little out of Battleford, and in wet weather travel becomes difficult, but otherwise it is as satisfactory as an unimproved trail could be. There are two sets of pits directly on this trail. The second set noticed coming from Battleford is the northwest corner of township 40, range 18. These pits form a useful guide to the stranger. The soil of this township is better than usual, and its quality was evidenced by an abundant crop of mushrooms in certain places, presumably where the buffaloes frequented. The soil would be suited for farming. The surface is all open prairie, nearly level. There was only enough scrub of the size to use for survey pickets, and there was no timber. There is a large hay meadow on section 6 extending as far as the eye could reach from the line. There is both fresh and alkaline water. The supply of fresh water is both plentiful and permanent. There is an ideal spring of ice cold water on the shores of Coldspring lake on section 13. The water wells up in several places, and forms quite a little slough, separate from the lake. No streams. Section 6 is largely liable to flood. At the time of the survey the water in the slough reached to a man's waist. No water-powers. (Flat lake reputed to have been dry long ago.) A heavy snowfall at the end of May was not supposed to be a usual thing. The first frost came about September 2, and was heavy. It was altogether rather a wet, drizzling season, too cold for mosquitoes and quite windy. The fall was early, but no severe cold weather developed until after our work was finished. Nearest fuel obtainable was from Mosquito Indian reserve. The wood there is rapidly rotting away. No stone quarries. No minerals. Duck, turkeys and antelope were all seen.—*S. James, D.L.S., 1903.*

Township 40.—The trail from Battleford to Tramping lake passes through this township, passing so close to the northeast angle of the same as to prevent anyone missing the pits. There is a steep ascent a little out of Battleford and in wet weather the trail becomes heavy, but otherwise it is as good as an improved trail could be. The soil is suitable for farming. Surface is open prairie nearly level. There is no scrub, simply a few bushes affording survey pickets, and no timber. A hay or grass marsh extends across the northerly part of section 11 and there is an expanse of about 80 acres in the southeast quarter of section 16. Water is all fresh or nearly so (High-bank lake water was used for making tea). Fresh water supply is sufficient and permanent. No water-power. The heavy snowfall at the end of May was supposed to be an unusual thing. The first frost came about the 2nd of September, and was heavy. It was altogether a rather wet, drizzling season, too cold for many mosquitoes, and quite windy. The fall was early, but no severe weather developed until after our work was completed. Nearest fuel obtainable was from Mosquito Indian reserve. The wood there is rapidly rotting away. No stone quarries. No minerals. Duck and prairie chicken were plentiful.—*S. James, D.L.S., 1903.*

Township 41.—The trail from Battleford to Tramping lake passes through the southeast corner of this township where the pits are immediately alongside the trail. There is a steep ascent a little out of Battleford and in wet weather the trail becomes difficult in some places, but otherwise it is satisfactory. Soil is suitable for farming. The surface is all open prairie nearly level. There is no scrub but a few sufficient to supply survey pickets. No timber or wood, no hay marshes. The water of Narrow lake is somewhat alkaline, but other bodies are fresh. The supply of fresh water is sufficient and permanent. No water-power. There was a heavy snowfall at

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 19.

the end of May, but it was not supposed to be a usual thing. The first frost and a heavy one came about the 2nd of September. Rather a wet drizzling season was experienced but the fall was fine and not very cold. Nearest fuel was not of the best and was obtained from the Mosquito Indian reserve. No stone quarries. No minerals. Duck and prairie chicken were common.—*S. James, D.L.S., 1903.*

Township 42.—From Battleford a trail passes through the northwesterly part of this township and affords convenient access to it. This trail is in as good condition as could be expected, and presented no difficulties at this time of year. The soil and grass of the township were better than usual and the township is good for farming. The surface is all open prairie and not quite level. No scrub of any size, just a few clumps of bushes were seen and no timber. On sections 2, 10 and 11, and extending into 14, a large shallow slough producing hay was not considered to require traversing. Water is fresh and abundant. Probably springs could be found on the draw that seems to be a creek in wet seasons. The supply of water is fresh and permanent. No special areas seemed liable to flood. No water-power. Heavy snowfall at the end of May, but not supposed to be a usual thing. First frost came about September 2, and was heavy. It was a wet drizzling season and windy. The fall was not severely cold. The fuel used (supposed to be nearest) was from the Mosquito reserve. The wood there, however, is rapidly rotting and was somewhat punky. No stone quarries. No minerals. Prairie chicken, partridge and duck were the game usually seen.—*S. James, D.L.S., 1903.*

Township 48.—The trail from Battleford to Onion lake runs through this township. It is a good road. The soil varies from sand to dark sandy loam, and is suitable for general farming and dairying. The eastern third of the township is rolling sandy land, but the rest of it is fairly level. It is prairie with scattered clumps of brush and small poplar. The only timber is small poplar from two to eight inches in diameter scattered about, but principally on the east and southwest portions of the township. There is good hay scattered all over the township on the low ground adjoining the sloughs. The water is generally fresh and apparently permanent in most of the small lakes and sloughs. Turtle river touches the west boundary, and this year is five or six feet deep and about one chain wide, running about four miles an hour. The water in it is good. The land is not liable to be flooded. There are no water-powers. It has been a cool, wet summer this year. There are no indications of summer frosts. The only fuel is small poplar from the bluffs scattered about. There are no stone quarries and no minerals. Ducks and prairie chickens were the only game seen.—*T. S. Gore, D.L.S., 1903.*

Township 49.—The Battleford and Onion lake trail touches the southwest corner of this township and the Turtle lake trail, which branches off from the Onion lake trail at the southwest end of Jackfish lake, enters this township on section 13 and goes out on section 35. They are both fairly good roads. The soil in the eastern half of the township is light and sandy, in the western half it is fairly good, but is much broken by sloughs and soft boggy marshes. It is suitable for grazing and hay. The township is about one-third brush and small poplar and willows. The surface is generally rolling. The timber is scrubby poplar from two to eight inches in diameter, and is scattered in clumps throughout the township. There is plenty of good hay on nearly every section. There is a small stream of good water about 15 links wide, running south through the westerly tier of sections from section 31 to section 18, and also a stream about the same size, running south through the easterly tier of sections, and a nice fresh water lake on sections 23 and 24, with sandy shore and bottom. There are small ponds scattered all over the township generally with fairly good water. There are some alkaline ponds and sloughs. There are no water-powers. The weather this summer has been very cool, with a good deal of rain. No indications of summer frosts were noticed. The only fuel is small poplar scattered through the township.

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 19.

There are no stone quarries and no minerals. There are plenty of ducks, prairie chicken and deer.—*T. S. Gore, D.L.S., 1903.*

Township 50.—Turtle lake trail runs north through this township from section 2 to section 35. It is a fairly good road, though but little travelled. It leaves the Battleford and Onion lake trail at the southwest end of Jackfish lake. The soil is generally a rich clay loam, inclined to be stony where the land is rolling. It is suitable for mixed farming. The surface is rolling on the south and west parts of the township and very broken and rough near the creek which flows south between the two most westerly tiers of sections, and in the eastern and northern parts of the township flat and marshy. It is about one-third covered with small poplar and willows and brush, most of it being on the west half of the township. The timber is scrubby poplar from two to eight inches, mostly on the west half of the township. There is a quantity of good hay, nearly half the area of the two easterly tiers of sections being hay land; there is also a good deal scattered about the rest of the township. There are numerous small ponds of fresh water scattered throughout the township, and a stream of good water about 15 links wide runs south along the line between the two westerly tiers of sections and a small stream which does not run all summer, flows south between the two easterly tiers of sections. There are no water-powers. It has been a cool wet summer this year. There are no indications of summer frost. The only fuel is small poplar scattered about the township. There are no stone quarries, and no minerals were discovered. There are plenty of prairie chickens and ducks and a few deer. The township is better suited for stock-raising and dairying than for grain-growing.—*T. S. Gore, D.L.S., 1903.*

Township 51.—(East and west outlines.)—There is much prairie along the eastern boundary and the whole township is more open than the one to the north. It is also better adapted for either agriculture or cattle ranging. There is a good supply of hay and plenty of firewood but very little building timber, though on section 19, east of said boundary, there is a nice spruce bluff. The land is rolling with a good average black loam soil and light subsoil.—*J. J. Dalton, D.T.S., 1903.*

(Subdivision.)—Turtle lake trail runs through the eastern tier of sections in this township. It is a fairly good road. The soil is variable, inclined to be gravelly in the higher land and heavy loam and clay in the flats. It is suitable for vegetables in places. The southeastern third of the township is nearly all marsh and hay land, with a few clumps of willow and poplar brush scattered through it; and the portion lying north and west from a line from section 36 to section 5 is undulating and covered more or less with willow and poplar brush, and in some places poplar and scattered spruce up to 14 inches in diameter. The timber is scrubby poplar and a little spruce up to 14 inches in diameter scattered through the northwestern half of the township. There is a quantity of hay all through the southeastern portion but of rather poor quality. The water is in shallow ponds and marshes and is not very good; it probably contains a little alkali and is very hard. Nearly all the southeastern portion described as marshy is liable in wet seasons to be covered with a foot or two of water. There are no water-powers. The climate is variable, not very liable to summer frosts. The only fuel is poplar from bluffs in the northwestern two-thirds of township and from adjoining townships. There are no stone quarries and no minerals. The only game is ducks and snipe. This township is only suitable for dairy farming, or cattle ranching on a small scale.—*T. S. Gore, D.L.S., 1903.*

Township 52.—(East and west outlines.)—Turtle lake cuts deeply into the northeast corner of this township destroying several sections. The lake is beautiful, extending for miles to the northeast. Some say that it is 25 miles long. It abounds in fish, has beautiful bluffs of spruce around its shores and is generally a very interesting sheet of water. The land is very inferior along the eastern boundary and north of the south branch of Turtle lake river, where the soil is shallow and the country

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 19.

scrubby. South of the river there are 200 or 300 acres of good prairie with deep black loam and light clay subsoil. This township has plenty of poplar for fuel and some spruce for building timber. Hay is not abundant.—*J. J. Dalton, D.T.S., 1903.*

(North outline.)—Turtle lake lies in the northeast corner of this township. Section 31 is broken by hills. Through sections 32 and 33 the land is tolerably level, though stony in places; it is covered with bluffs of poplar and balm of Gilead surrounded by thick windfalls. Section 34 is rolling and from its northeast corner to the western shore of Turtle lake, the soil supports a forest of poplar 6 to 8 inches in diameter. Section 36 and a narrow strip of section 35 lie in Turtle lake, which extends 6 miles north of the line, with a deep bay to the northeast, and about $2\frac{1}{2}$ miles south of it, where its outlet, Turtle river, begins. The shores of this lake, like those of many other large ones of this district, appear to be formed by a jetty of boulders which have been shoved and piled 5 or 6 feet high by ice pressure, and have become cemented together, forming now a kind of natural high road between the lake proper and marshes adjoining it. This jetty, from 5 to 10 feet wide, is always timbered with birch, poplar and cottonwood. No timber of commercial value was seen near the lake in the vicinity of the line, but quantities of large sized logs (spruce, poplar and pine) are afloat near its shore. These would indicate that there must be near its northern extremity some fine timber, but for some reason these logs were not taken out, though Turtle river would seem to be a good stream for that purpose. The soil in this township is a sandy loam, 6 to 9 inches in depth, overlying a clay or clay and sand subsoil.—*A. Saint Cyr, D.L.S., 1903.*

Range 20.

Township 35.—At present this township is most easily reached by travelling west along the old trail near the 9th correction line from the military trail between Battleford and Swift Current. Tramping lake intersects this township in a valley from 100 to 200 feet deep, with that exception, the surface of the country is rolling prairie. The soil is first and second class, and is eminently adapted for wheat-raising. On the sides of the hills around Tramping lake some timber (mostly poplar and maple) is met with, but not in sufficient quantity and size to afford building material. There are no large hay meadows in this township. Besides Tramping lake another small lake has been surveyed on section 24. There is no running water sufficient to furnish power in the township. Excepting the small amount of timber around Tramping lake, there is no fuel in the township. There are no stone quarries in the township. Mines and minerals there are none. There are ducks and chicken and a few antelope in the township.—*H. B. Proudfoot, D.L.S., 1903.*

Township 36.—This township is most easily reached by the trail from Saskatoon, which passes about 6 miles south of the southerly boundary. The soil is all clay loam, with an alluvial deposit of black loam. With the exception of a few bluffs of poplar and maple on the east bank of Tramping lake, there is no timber in the township. There is no running water; the water in the sloughs is fresh, but in Tramping lake very alkaline. The climate is good, a few frosts during survey, but nothing that would hurt grain. The only fuel obtainable is the dead maple and poplar on the east bank of Tramping lake. There are no stone quarries or minerals. Geese, ducks and prairie chicken are the game to be found.—*H. B. Proudfoot, D.L.S., 1903.*

Township 37.—A trail from Battleford passes through the northwest corner of township 38, range 20, which affords the easiest way of reaching this township. The soil is all clay loam or black loam, a first-class wheat country. With the exception of the east shore of Tramping lake, there is no timber whatever in the township. This timber at Tramping lake is mostly fire-killed. Hay can be cut around the few sloughs. The water in the small lakes and sloughs is fresh, but in Tramping lake is very alk-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 20.

line. There is no water-power. Some frosts were noted during the survey (August), but I do not think the country is liable to summer frosts. With the exception of the timber above noted at Tramping lake, no fuel is available. There are no stone quarries or minerals. Antelope, duck, geese and prairie chickens are seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 38.—A trail from Battleford in very good condition passes through the northwest corner of this township, affording the most convenient route for reaching it. The soil is generally clay, with an alluvial deposit of black or clay loam, an excellent wheat country. With the exception of the valley of Tramping lake, the surface is all prairie, rolling, undulating or level. There is a small quantity of timber, mostly dead, along the east side of Tramping lake, and in some of the ravines on the west side. Hardly any of it is suitable for building purposes. Hay can be cut around most of the sloughs. There are no hay marshes of any extent, and the prairie grass is both short and thin. The water in the small sloughs is mostly fresh, but in the lakes is very alkaline; no running water was met with. In the beginning of September the nights began to turn frosty, but the days were fine. The only fuel available is the limited supply of timber around Tramping lake. No stone quarries or minerals were found. Game,—antelopes, ducks and geese.—*H. B. Proudfoot, D.L.S., 1903.*

Township 39.—This township lies to the southwest by south of Battleford, and is crossed by the Cypress trail from sections 24 to 4, and as this trail is a very good one, this is the best way to it, the distance from Battleford being about 32 miles. The soil in this township is principally a strong clay loam, of most excellent quality, suited admirably for the production of all ordinary farm crops raised in Canada. The township is entirely in prairie country, there being no wooded growth anywhere in it. The surface is generally of a gently rolling or undulating character. There are no extensive meadows, but I fancy from appearances (I was there rather too early to judge well) that a good deal of hay largely of upland grass might be cut bordering the marshes found in the township, of which there are quite a number, though none of them are very large. Water was quite plentiful when I was there in early June, and I fancy quite a good deal of it permanent, and good and sweet, except that found in Crooked valley, a wide deep ravine, along which flow the headwaters of Eagle creek. The water in this stream and that in the marshes and brooks connected with this valley are saline and disagreeable, though it would be all right for watering stock. As to water-powers, the only possibility of such a thing would be by a barrage or dam across Crooked valley just mentioned. This valley is about 6 miles in length in the township, and would average nearly half a mile in width, with a depth at the west below prairie level of say 60 feet, and 90 feet where it leaves the township. A dam to hold this trough full of water would be a very expensive affair by reason of the earthy banks, the cost being much too great to make it a practical scheme, beside which my opinion is that it would take the rainfall of at least two years to fill it up. If a structure of this kind were contemplated the proper place at which to put in the retaining structure in this valley would not be in this township, but at a point about 20 miles to the south, where the level of the country descends from the third to the second prairie steppe. This would create a lake of about 15 square miles and with a depth of not less than 60 feet if full advantage of the situation were taken. By reason of the light rainfall in this district one-third only of the volume of water thus held in would probably be the yearly supply. The general indications as to climate are that humidity is short and frostiness somewhat long. I do not consider the district good for grain, but as a summer range for stock it could not be surpassed; the pasture is exceptionally good. There is no fuel in the township that I know of, nor any nearby, nor any exposures of coal or lignite. No rock exposures were seen, so that in all probability no quarries could be developed. Great numbers of large stones (boulders) lie all along the sides of Crooked valley, from which large quantities of building stones could be

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 20.

manufactured. A considerable proportion of these stones are of limestone and marble, and if fuel could be gotten splendid lime could be made from them. No valuable minerals were seen. Antelope were quite numerous, and immense numbers of ducks, geese, swans, &c., congregate in the lakes and marshes in Crooked valley. The only stream in the township, named Eagle creek, is here very small, and would be represented by a flow of water 3 feet wide, 10 inches deep and one-half mile per hour on June 1, and probably nothing at all on September 1.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 40.—This township is reached most easily from Battleford by the Cypress or Red Deer Forks trail which passes close to its southeast corner. The distance from Battleford is about 30 miles, and the trail is good. The soil throughout the township is good, being largely clay loam of splendid quality and eminently fitted for the growth of all usual farm crops grown in Canada. The surface is prairie, mostly of a gently rolling character, with some ridgy country. Some stony ground was seen and generally stones can be seen almost anywhere in the township. This, however, is no detriment, but the reverse, as in the erection of all kinds of buildings these stones would prove of great value in a district so bare of timber as this is, beside which even when plenty of timber and lumber is to be had, the foundations of buildings must be built on something more durable, and here is where the stones mentioned would come in. There is no timbered growth in this township whatever. Considerable hay ground exists on sections 35 and 20 along lakes Nos. 1 and 3. I could not judge very well as to quantity that might probably be gotten here, as it was too early in the season when I was there, but there would be some hundreds of tons, no doubt. Water, of which the supply seems ample, is fairly well distributed and apparently permanent and the quality is good except in lake No. 2, sections 34 and 35, which is extremely saline and disagreeable. There are no streams, and of course no water-powers. The general climatic indications are dryness and frostiness. No fuel is readily to be had of any kind. No veins or seams of coal or lignite were seen. No exposures of rock exist in the township and thus no likely places for quarries could be pointed out. No minerals of any economic value were found. A few antelope were seen and immense numbers of ducks, plover and other water fowl swarmed in the several lakes found in the township.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 41.—This township is most easily reached by way of the Sounding lake trail from Battleford, taking this trail out for about 20 miles, where a more southerly trail forks off passing across the northwest part of the township; the distance to the central point of the township from Battleford is about 28 miles. The soil in the township is very varied in character, there being some excellent clay loam and sand loam, and considerable saline land, with poor soil. As a whole the township is much better suited for grazing than for grain growing. The surface is entirely prairie with no wooded growth whatever. There are no large hay meadows, but scattered over the township are small ones from which considerable hay may be cut. Water is fairly well distributed, that in the central part of the township from north to south being saline, the water elsewhere is very good and fresh. There are no permanent streams and no water-powers. I believe that frosts occur in summer in this locality. The climate from such evidence as can be seen is very dry, the elevation of this part of the country being the cause no doubt. No fuel of any kind is available in the township, and I did not learn that any considerable quantity was to be had anywhere near by. Neither coal nor lignite was seen, nor were any indications of them discovered. No beds of rock were seen nor exposures of anything of a rocky nature noticed. It is not probable that quarries of stone exist in the township. No minerals of an economic nature were seen. Vast numbers of ducks in the salty marshes in the central part of the township were the only thing of the game kind seen.—*Fred. W. Wilkins, D.T.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 20.

Township 42.—As the Sounding lake trail from Battleford passes centrally from east to west through this township, this is the best way to get to it. The distance from Battleford is about 20 miles and the trail is good. The soil throughout, with the exception of a little saline land on sections 4, 32 and 33, is good, being clay and sand loam of splendid quality, suitable for the growth of any crop grown in Canada. The surface is entirely prairie, there being no wooded growth whatever. There are no extensive hay meadows, but quite a bit of hay, both of the kind called slough hay and upland hay can be obtained here and there scattered over the township. There is one small stream (not running at the time of survey in August) in the township passing from south to north near the east side. The water in this (in pools) is not good, though it would be wholesome enough for stock, but the rest of the water met with is fresh and good. The supply is fair and apparently permanent and fairly well distributed, so that without doubt a good summer range for cattle, &c., could be had here. There are no water-powers in the township, nor any prospects that they could be developed by the building of dams. From appearances I would expect the summer in this locality to be generally very dry, and frosts, I fancy, would not be unknown, as the elevation is considerable. There is no fuel of any kind in the township, nor any readily to be obtained that I know anything of. No seams of coal or lignite were seen. No exposures of rock were noticed, nor any places where quarries might be opened. No economic minerals of any kind were seen. A few ducks comprised all the game met with.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 43.—This township can be most easily reached by the Sounding lake trail from Battleford. The trail is followed for about 14 miles when it is left on the left hand and a due west course is taken over smooth prairie for about six miles when the township is reached near its southeast corner. The travel is good all the way. The soil is about equally divided between clay and sand loam, with some saline land, and in general is good and suitable for any crops ordinarily grown on farms in Canada. The surface of the township is practically all prairie of an undulating or gently rolling character in general, the exceptions to this being the valley or ravine of Cutknife creek, and a range of hills in the central part known as the Sliding hills. There is no wooded growth in the township, except some patches of thick brush and willows along Cutknife creek, on the northeastern part of the township, and the area covered by this is confined to a few acres. There are no large hay meadows, but quite a bit of hay could be got at some small ones, which are found here and there all over the township. Water both fresh and brackish is found all over the township in fairly good supply, and is permanent. Cutknife creek ceases to flow in the latter part of the summer, but abundance of water, a little brackish in flavour, is found in pools all along. This stream is the only real stream in the township, and passes across it in the central part from west to east, turning northerly. No useful water-power could be made in the township, the supply of water being too precarious. On account of the elevation (third prairie steppe), my opinion is that frosts occur too frequently during the summer for successful grain-raising. A limited quantity of wood (poplar) exists in the township (44) to the north of this one, but is not readily gotten at by reason of the valley or ravine of Cutknife creek, which is very difficult to cross. As it is, this wood will not be long available, as it is practically all dead and dry, and mostly lying down. The next prairie fire will probably sweep it all away. There are no coal seams or lignite seams exposed in the township. No rock of any kind in beds was observed, and therefore it is not probable that stone quarries could be opened up. Surface stones were plentiful in some places and generally quite a few are seen everywhere. These could be utilized for masonry work by splitting them. No useful minerals were observed, and it is not likely that any exist in the township. Ducks of several different kinds and prairie chickens (pin-tailed grouse) were plentiful. This township is an excellent one for grazing, and would make a good summer range for cattle or horses,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 20.

as it is generally far enough away from the bush to be free of black flies, which are a dreadful pest in the more wooded parts of the country. Mosquitoes are very plentiful though.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 44.—This township lies a little to the north of west from the town of Battleford, the central point for the district in which it lies and its nearest point is distant from that place about 20 miles. To reach it I would prefer to go out southwest-erly from Battleford as a starting point by the Sounding lake trail, following the same about 15 miles, then turning off to the right travel in a due northwest course about nine miles over the prairie when the locality of the southeast angle of the township will be reached just to the east of the elbow of Cutknife creek. From here all the northern part of the township (north of sections 1 and 6) can be reached more or less readily, that is the part north of the creek. To reach the southerly tier of sections is another matter; for the ravine of Cutknife creek lies between and it is not easy to cross it with a prairie outfit. I fancy a way could be found just at the elbow, to get down into the bottom and out of it up a slope on section 2, a little bit west of the quarter section pits on the east side of this section. Otherwise I do not know of any place in a township where a crossing can be effected. Failing this the only alternative is to turn to the southwest from the elbow and travel about 6 miles passing over the northern end of the Sliding hills in township 43 in this same range. Here a crossing can be made of this same Cutknife creek, which has bent around in its upper part up this way also, and then travelling due north about 4 miles, sections 4 and 5 of the township under discussion will be reached. It will be seen by this that this township is exceedingly divided into two parts (the southerly tier of sections from the rest) by the ravine or valley of the creek first mentioned. The stream is small but during the course of ages has evidently worn out of this high country an awful ditch to drain through. It empties into Battle river about 15 miles northwest of the point I have called the 'elbow,' and for about 15 miles of its course flows through what might almost be called a canyon until it issues from the third prairie plateau (Eaglehill) in section 22, township 44, range 21. In the southern two-thirds of this township the soil is splendid (a clay loam) and there is not any better lying out of doors. The north third at the foot of the escarpment of the third prairie steppe is simply a sand bed thrown up by the wind, into more or less high knolls, ridges, or banks, and the soil here is practically useless. In the first mentioned part of the township the soil is most suitable for any agricultural purpose. The southern tier of sections (2 to 6) except section 1 which lies mostly in the canyon of Cutknife creek and is mostly gently undulating prairie and the southern part of sections 26 to 30 is also a prairie tract, the balance of the township is in what would be called park country, about one-sixth of the surface being taken up with patches or islands composed largely of willow bushes intermixed with small poplars, the growth being apparently about eight years old. A good deal of dry wood mostly lying down is found in some of these patches, and judging from this and the fact that there is also a thick mat of old dry grass of several years production, beside the living grass growing up through it, I would suppose that seven or eight years ago a prairie fire had been over this spot and had killed the wooded growth (the dry trees were in size up to about 9 inches diameter) then existing, and the present growth had sprung up since. None of the new growth is as yet of a useful size and the chances now are that it never will be. The coming in of land hunters and others before unknown, will surely be the cause of fire again shortly, and then, as there is so much that is dry to burn, everything in the way of wooded growth will be swept away. This foregoing applies particularly to the middle part of the township where the soil is good. In the northern part where the soil is so light and sandy the wooded growth is more open and the groves of poplar found larger (up to 8 inches in diameter), but scrubby in growth. As these patches of bush in these parts are mostly isolated by open sand beds with no growth of grass, fire is not liable

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 20.

to damage the little wood there is here. Also in the canyon of Cutknife creek are a good many patches of brush (willows and small poplar) with a few small groves of larger stuff, say up to 8 or 9 inches in diameter, but the quantity is small. There is nothing in the township in the way of timber that would be worth while to reserve for any purpose, firewood (limited in quantity) is all there is with a few fence rails and a few building logs, and these latter all but inaccessible in the gorge of the creek mentioned. There is no hay land in the township—I mean by this, natural hay meadows. There is an abundance of water in the township and practically it is all good and fresh. Along the north boundary of the township are several good sized lakes, having in them the very best and clearest water I have ever encountered in the Northwest Territories. I believe these lakes have fish in them for I picked up a minnow on the shore of one of them, but of what kinds I can say nothing. They are lovely sheets of water with long stretches of lovely sand beach. There are no natural places for power on the one stream (Cutknife creek) in the township, but the canyon through which it flows could be dammed say near the west boundary of the township and a pond made of perhaps 15 miles in length (running back into township 43, range 20) on an average of 30 chains wide, with a depth ranging from a few inches at the upper end to from 80 to 100 feet at the dam. The supply of water would be, say three times the lowest stage, which this year was a stream 3 feet wide, 6 inches deep, 1 mile per hour. However, the better use to which this stream could be put I fancy would be to furnish water for irrigation along the valley of Battle river, where there is without doubt land that can be reached by this stream. The general indications as to climate are great dryness and a liability by reason of elevation (third prairie plateau) of summer frosts. Sufficient fuel in the way of poplar wood exists practically everywhere in the township for immediate settlement, but as to the whereabouts of a permanent supply I cannot speak. No veins or seams of coal or lignite were discovered. No minerals of any economic value were seen and no places where quarries of stone could be opened up. As to game a few jumping deer were seen in the canyon of Cutknife creek and plenty of ducks in all ponds and lakes, with some black geese and some swans. Very few prairie fowl were seen.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 49.—This township is reached by the Onion lake trail from Battleford, which runs through it from section 13 to section 31, and is a good road. In the southern part of the township the soil is light and sandy, but the north and easterly parts are better. It is suitable for pasture, and in places for general farming. The surface is generally rolling, with some large flats and sloughs. It is about one-third, or a little more, covered with bluffs of small poplar and willows scattered throughout, and the balance is prairie and little ponds and sloughs. The timber is small poplar, seldom exceeding 6 or 7 inches in diameter, and is scrubby. It is scattered about through the township, the greater part of it being in sections 15, 16, 17, 18, 19, 20, 29 and 30. There is plenty of good hay to be obtained nearly all over the township, particularly on section 24. Water is fresh, very little alkali. Turtle river winds through the township from the northwest corner to the southeast. It is about a chain wide, and from 3 to 6 feet deep and runs about 2½ miles per hour. I see no danger of flooding from it. There are no water-powers. Climate is good; I have seen no indication of summer frosts. The only fuel is poplar, obtained from bluffs scattered throughout the township. There are no stone quarries and no minerals. There is one rancher located in the township on section 32, who has been there about eight years. He bought out a former occupant. He raises quite a number of horses and cattle and says he has some 40 acres under cultivation.—*T. S. Gore, D.L.S., 1903.*

Township 50.—This township lies about 4 miles north of the Battleford and Onion lake trail, and is easily approached from it. The trail is in fair condition. The soil is generally a clay loam, though sandy in some places near Turtle river. It is suitable for general farming. The surface is rolling and about one-fourth covered with scrub

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 20.

and small poplar, most of the scrub being on the north and east parts of the township. The only timber is poplar up to 6 inches in diameter, scattered about principally near the northeast part of the township. There is very little hay; a small quantity could be obtained around sloughs throughout the township. The water in ponds is fresh. Turtle river flows down the west side of the township, and this year is about 1 chain wide and 4 feet deep. The water is good. It flows about $2\frac{1}{2}$ miles per hour. The land is not liable to be flooded. There are no water-powers. The climate this summer has been very cool and wet. There are no indications of summer frosts. Small poplar is the only fuel. It is scattered about the township, but is more plentiful in the northeast part. There are no stone quarries and no minerals. Ducks and prairie chickens were the only game seen.—*T. S. Gore, D.L.S., 1903.*

Township 51.—(East and west outlines.)—This township is much better than the one to the north. Along the eastern boundary it is scrubby, with a good deal of poplar scattered on both sides of the east boundary. To the east the country appears more open, with better prospects for agriculture. This township appears to be generally hilly, with many sloughs. There is no hay. Turtle lake river crosses the northeast corner of this township; it is rapid and not fordable for horses.—*J. J. Dalton, D.T.S., 1903.*

(Subdivision.)—The trail to Emmaville post office passes through the southwest corner of this township, and is a fairly good road. The soil is a rich black loam, and is suitable for general farming. The surface is rolling, and a great deal of it covered with poplar and willow scrub and small poplar timber scattered throughout, but thicker on the eastern half of the township. The timber is scrubby poplar up to 10 inches in diameter, scattered all over the township, but thicker on the east half. There is not very much hay, but what there is is good, and is scattered about mostly in the southern part. The grazing is very good. The water in sloughs and ponds is fresh and good, and there is plenty of it. Turtle river flows through the northern part of the township. It is about a chain wide, and from 3 to 5 feet deep, running about $3\frac{1}{2}$ miles per hour; water good, but hard. It is not liable to cause floods on the adjacent land. There are no water-powers. The climate is variable; there are no indications of summer frosts. The only fuel is small poplar scattered about the township. There are no stone quarries and no minerals. Prairie chickens and ducks were the only game seen. There is a good growth of upland grass and vetches throughout this township, and being so well sheltered with thick brush and small timber, it would afford splendid winter pasture for horses.—*T. S. Gore, D.L.S., 1903.*

Township 52.—(East and west outlines.)—This township is rolling, scrubby and hilly, with clumps of small poplar, poplar thickets, numerous deep ponds and sloughs. The soil is very shallow everywhere along its eastern boundary, and is not well adapted for either farming or grazing. Fuel is plentiful, and building timber can be found in small quantities only. Hay is scarce.—*J. J. Dalton, D.T.S., 1903.*

(North outline.)—Through part of this range the country continues rolling. It becomes quite hilly in the eastern half, and is generally covered with patches of young poplar and willow scrub, among which there are many small prairie openings. Half a mile to the north of the line lies Round Sandy lake, reported to be 4 miles in diameter. Near its southern extremity, in section 3, township 53, are a few shacks inhabited during certain seasons of the year by Indians in quest of fish, with which this lake, like so many others in this district, abounds. Three roads coming from the south intersect the north boundary of this township. The central one intersects the line near the middle of section 34, and leads through open country to those shanties. The eastern wagon road winds amongst the hills near the northeast corner of the township, whilst the third one is a new trail crossing the line close to the northeast corner of township 52, range 21. No streams of any account were intersected by this line. The soil in sections 31 and 32 is a sandy loam, eleven inches deep, overlying a subsoil of clay.—*A. Saint-Cyr, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN.

Range 21.

Township 5.—The township is high, dry, rolling, bare prairie land. A few small sloughs are found.—*G. J. Lonergan, D.L.S., 1902.*

Township 6.—The township is traversed by Frenchman river. On the bank of the river in the northwest part of the township is situated the East End post office. Ranchers have availed themselves of the best locations along the bank of the river. No timber is to be found in any part of the township.—*G. J. Lonergan, D.L.S., 1902.*

Township 7.—The township is high rolling prairie. It is well watered by Swift-current river, which flows through the northeastern part, and by numerous springs and creeks that are found in the western half of the township. Good timber for building purposes is available in the deep ravines of the northern part of the township. Three settlers were found and appeared to be in a prosperous condition.—*G. J. Lonergan, D.L.S., 1902.*

Township 8.—This township is bare, high, rolling prairie. Swiftcurrent river has its source in section 10 and then flows south, thus leaving very few places available for ranching. The balance of the township could not be recommended for ranching, as there is no water.—*G. J. Lonergan, D.L.S., 1902.*

Township 35.—A trail from Battleford passes to a junction with the Saskatoon trail, which passes through the township. The two trails join to the northwest of this township. The trail to Saskatoon was used by other contractors. The trail to Battleford is unimproved, but well located and mostly passable. The soil is suitable for farming. The township is all open prairie, but cut up badly, as the topography shows, by a series of ravines or coulees. Shrub growth barely sufficient for a supply of pickets of poor quality, and no timber. Any hay of value would be on section 9 on an area of probably twenty to forty acres. The sloughs are pretty nearly all dried up, however, there are two good lakes to afford permanent water, also a slough on section 22 and on section 11. The water may not be permanent in dry seasons. No areas liable to flood. No water-power. There was a heavy snowfall at end of May, but probably not usual. First frost was about September 2, but no serious snowfalls during the open autumn. A wet drizzly season was passed. Fuel was obtained on the nearest shores of Tramping lake, but it was not very good. No stone quarries. Sodium sulphate (or salt cake) was found crystallized out on the stones of shore of Sodium Sulphate lake. No game was seen.—*S. James, D.L.S., 1903.*

Township 36.—A trail from Battleford passes through the township. It is an unimproved trail, but beyond being wet and difficult at times its position could not well be improved. It passes farther south to a junction with a trail leading to Saskatoon. The soil of this township is suitable for farming. It is all open prairie (except the two far hills) with not enough shrub growth to make survey sights. No timber. No hay in quantity. Sloughs are now pretty dry, but there is good water in slough on section 17, where the party camped, also on section 31. This water, though, may not be permanent in drier seasons. No likely flood areas and no water-power. There was a heavy snowfall at end of May, but it was probably not usual. First frost about September 2, but no serious snowfalls during an open autumn. A wet drizzling season was passed. Fuel was obtained of excellent quality on the east side of Tramping lake. No stone quarries. No minerals. Game not seen.—*S. James, D.L.S., 1903.*

Township 37.—From Battleford, a trail passes through the township. It is an unimproved trail, but beyond being wet and difficult at times, it cannot be much improved or shortened. It passes on to a junction with a trail to Saskatoon, which trail was used by other contractors, but not by our party. Soil is suitable for farming, but there are some stones in places. It is all prairie, with not enough shrub growth to make pickets for survey purposes and no timber. There is a hay marsh or slough on sections 10 and 15, and also on sections 22 and 23. The former about 100 acres, the

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 21.

latter perhaps 50. There is good water in both these sloughs, also in sloughs on north boundary of section 8 and on sections 9 and 15. Otherwise water was hard to find. On section 15 the greater part of the south half of the section is liable to flood. No water-power. The heavy snowfall at the end of May was probably not usual. First frost was about September 2, and it was heavy. We had a wet drizzling season and windy. Fall extended to pretty late and was not too severe. Fuel was obtained from across Tramping lake, and was fine, dry poplar of 5 to 7 inches in diameter. No stone quarries and no minerals. Game was not seen.—*S. James, D.L.S., 1903.*

Township 38.—From Battleford a trail passes through the township. It is an unimproved one, but beyond being wet and heavy at times, it cannot be much improved upon or changed. It passes to a junction with a trail to Saskatoon, which trail was used by other contractors, but not by the writer. The soil is suitable for farming, but is somewhat stony in places. It is all prairie, with not enough growth to make pickets for survey use, and there is no timber. There is a hay marsh or slough of about 20 acres on section 1, but not of an encouraging character. Water, where at all obtainable, was fresh, but it had to be carried in cans for tea for lunch. On sections 1 and 22 (latter being camping place), fresh water could be obtained. No land liable to flood and no water-power. Heavy snow fell at end of May, but this is not a usual thing. First frost came about September 2, and was heavy. It was a wet, drizzling season and windy. Fall was not severely cold and extended quite late. Fuel was obtained from the easterly side of Tramping lake and floated across by means of a boat lent by Mr. Proudfoot. It was very fine burning wood. No stone quarries. No minerals. Prairie chicken, partridge, duck and wild turkey were not so much seen as usual.—*S. James, D.L.S., 1903.*

Township 39.—To reach this township most readily one should go out southwesterly from Battleford by the Cypress or Red Deer Forks trail, following this trail for about 30 miles, then strike off due west over the prairie a distance of about 7 miles, when the northeast corner of the township will be reached. The soil is practically all a strong clay loam of splendid quality in every way suited for agricultural purposes, and the growth of all ordinary farm crops, produced in Canada. The surface is open prairie over the entire township, there being no wooded growth of any kind. There are no extensive hay meadows, but quite a lot of hay may be had around some of the small marshes in the interior of the township, notably at the meeting of sections 23, 24, 25 and 26. There was a very good supply of water everywhere in the township at the time I was there, and I fancy, that the marshes, &c., in which it is found do not all dry completely up. The stream (Eagle creek) which is found in Crooked valley is saline, as well as the lakes and marshes therein, but the water would not be unwholesome for stock. This valley or ravine runs right across the township from east to west or rather to the northwest from the next township to the east, and has a depth below prairie level of from 15 to 20 feet at the west to about 65 feet in the east, the sides of which are steep and covered with stones all the way along. The stream (Eagle creek) spoken of in it has little or no current, and I fancy, does not really run except for a short time when the snow is going in the spring. There are no natural water-powers in the township, but possibly one might be created by damming Crooked valley and thus a pond or lake be formed of considerable size, which might be used for producing power. This would be an expensive work, and of its real value as a power little or no idea could be formed without knowing about the rainfall of this district, which would appear to be very light. Appearances would seem to indicate that great dryness of climate is the rule, with also a great liability to summer frosts. No fuel of any kind is found in the township, and no veins or beds of coal or lignite were noticed. No fixed rock was seen and thus no places for quarries could be indicated. No useful minerals were found. Antelope are fairly numerous and at all

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 21.

lakes and marshes great numbers of ducks were seen.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 40.—There are two ways by which this township may be quite readily reached. First, by the Sounding lake trail for about 27 miles out from Battleford, thence due south about six miles. The other way by the Cypress trail or trail to Red Deer forks the same distance out from Battleford as the other, then due west seven or eight miles. Both of the trails mentioned are good, but after leaving the trails the prairie is rough and the travel hard. The soil over the greater part of the township is a good clay loam, suitable for the raising of any ordinary farm crop. In the southwestern part, however, there exists quite a tract of very bad land, saline and boggy. Sections 5, 7, 8, 17 and 18 are almost wholly of this nature, and parts of 4, 6, 9 and 19 are also included in it. The surface of this township is entirely open prairie, without any wooded growth whatever. There are no large hay meadows, and no great amount of hay could be got in this locality. There was an abundance of water at the time of survey (June), but I fancy it would get pretty scarce towards the end of the summer. Where found in the better part of the township, the water is good in quality, but in the saline portion mentioned it is bad. There are no streams and no water-power in the township. Apparently this is a dry section of country, and in my opinion it is subject to summer frosts also. No fuel of any kind is readily available that I know of. No seams of coal or lignite were seen. No rock exposures were observed, nor any places where quarries of stone could be opened up. Minerals—none. A few antelope were seen, but other game was not much in evidence. Good bricks could be made of the clay soil, which is all but universal. In the saline area spoken of are large areas underlaid with a very plastic clay of a yellow colour, which may prove of some value for pottery or cement making.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 41.—This township is entirely an open prairie, with in general a gently undulating surface. Two low gravelly ridges are found in the township, one in the northeast and the other in the southwesterly part of the same. In a good many places stones are quite plentiful, and more or less of them are seen everywhere in the township. Water is not plentiful, though what there is of it is good in quality. There are no hay meadows in the township. The soil, a good clay loam in general, is excellent in character, and if climatic conditions are favourable, could not be excelled for all ordinary farm crops. I am inclined to think that frosts occur too often for successful grain growing. No water-powers exist in the township nor fuel of any kind. No useful minerals were seen, nor any stone quarries or beds of rock of any kind. There is no wooded growth of any kind in the township, and no kind of fuel is readily available anywhere that I learned of. A few antelope were seen near the south side of the township. Mosquitoes are found in good supply and most interesting in their attentions. Sounding lake trail, passing through the northerly part, is a very good trail, and the distance from Battleford is about 30 miles.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 42.—The Sounding lake trail passes across the southeast part of this township. This trail is a very good one, and the distance by it to Battleford is about 28 miles. The soil is in general an excellent clay loam, though in the northern part some patches of saline land are met with. If climate is suitable the land in this township can scarcely be surpassed for any ordinary farm crop. The surface of the township is entirely open prairie with no wooded growth of any kind. There are no hay meadows. Water is not plentiful, but with the exception of that found in the saline land spoken of is very good in quality, and is fairly well distributed. There are no permanent streams and no water-powers in the township. I would judge the climate to be frosty in summer, as the elevation (third prairie steppe) is considerable. No fuel of any kind was seen in the township nor any coal seams observed. Fuel is not readily available, that I learned of, anywhere near-by. No stone quarries or beds of stone or rock exist in the township, though scattered about generally surface stones

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 21.

are found that could be split and used to build walls with. These stones are mostly composed of granitic or gneissoid rock, a very few among them being of limestone of a saccharoidal variety. No minerals of a useful kind were seen. Little or no game was met with. As a general thing, high land hay can be had in limited quantity all over the township.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 43.—This township is not on any direct line of travel, no regular trail passing through it, but it may be reached by the Sounding lake trail from Battleford. Perhaps the most convenient way to adopt would be to go out from Battleford by the trail mentioned for about 14 or 15 miles, then turning off the trail, travel due west, where very shortly the Sliding hills will come into view in township 43, range 20, passing these on the south, a couple of miles beyond the township is entered in its southerly part. The total distance from Battleford being about 27 miles, the trail portion is good and the other not very bad. The soil in this township is generally exceptionally good, being for the most part clay and sand loam of great depth; some saline ground, poor and stony is found along the southern boundary in sections 3, 4 and 5 principally. As a rule the soil is all one could desire as land for agricultural purposes, suitable for any ordinary farm crop grown in Canada. The township is entirely in prairie country, with the exception of a few small willow bushes on the southern part, no wooded growth exists within its borders. On sections 23 and 26 there is one very good hay marsh which would furnish perhaps 25 acres of ground to cut over. There are, however, no extensive meadows in the township, but a number of marshy spots, more especially in the southern part, would furnish a considerable quantity of hay to intending settlers. There is considerable permanent water in the township. Cutknife creek crosses from west to east and although not running at the time of survey, it contains a large supply of water in pools, which being only a little brackish in flavour is quite good enough in every respect for all kinds of stock. Indeed in many of the large pools the water is quite good enough for household use. Elsewhere the water in marshes and sloughs is fresh and good and the supply is fair throughout the township. As there are no permanent streams in the township no water-powers could be developed, and there are no rapids or falls on the only stream, Cutknife creek, in this locality. Fuel is not readily obtainable in the township, and there are no beds or seams of coal or lignite so far known in it. Probably two or three townships farther north there may be some wood to be had along Battle river, but that would be a long way to go for it. On the east and north of Cutknife creek in township 44, range 20, there is a little wood mostly dead and dry, but I do not think this of any use to this township as the valley of Cutknife creek is so very difficult to cross, and then the very great probability that prairie fires will have swept this wood away in any case before settlement will require to look for it. No rock exposures were seen in this township. No useful minerals of any kind were seen. No large game was noticed, but ducks and small wading fowls and snipe were, in many places, plentiful. This township would make a good summer range for stock.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 44.—This township lies to the west and a little north of Battleford, the central point for this district, and perhaps the best way to reach it would be to start from that town by the trail to Poundmaker's reserve, following this trail for about 20 miles, which would take one well into the reserve. One south from this brings one to the south boundary of the reserve in about 4 miles, and as this township lies immediately to the south of the reserve here, from this as a starting point any point in the northeasterly part of it may be reached. To reach the northwesterly part, the trail spoken of should be followed a few miles farther on across Cutknife creek until the plateau on the west of Cutknife hill is reached, and then turning southerly a couple of miles the township is again reached. To reach the southerly and westerly parts of the township after leaving the trail at the first place mentioned a southwest course should be taken, and as the Eagle hill (3rd prairie steppe) is approached keep to the

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 21.

west parallel to it at about one-half mile distant, and look for the crossing of Cutknife creek by an old and very faint trail, which seemingly leads almost due south directly up the valley of the creek. An ascent out of the creek valley (150 feet or so) can be comparatively easily made here to the level of the parts of the township desired. The Eagle hill mentioned runs across almost due east and west for many miles, and rises from 150 to 200 feet, and is a serious obstacle to surmount. On account of this hill and the deep valley of Cutknife creek, with dozens of almost impassable ravines which enter into it, this township is a very hard one to get about in. The trail above mentioned (from Battleford) is a good one, and the travel is also very good after leaving the trail, except for the tremendous hills to be surmounted to get into the township. All kinds of soil are found in the township, some valueless, and a good deal first class and capable of producing good crops under favourable climatic conditions. The township is practically a prairie township, but it is dreadfully cut up by extremely deep ravines that are most difficult to pass. In these ravines, but never visible until you stand right on the edge, are small groves of poplar, balm of Gilead and a few white birch trees, the largest attaining to about 10 inches in diameter, but often of good length. These ravines in places are filled full of the very worst species of tangled willows and other brush. The wood just spoken of is practically of little value, as it is the next thing to an impossibility to get it out of the awful places in which it grows. There is no danger that prairie fires will ever touch or damage to any extent these groves, as there is so little to lead the fire down the broken clay sides of these gorges. There is no hay land in the township. Water is plentiful, quite a number of ponds and marshes being found, and then most of the ravines have small runs of water in them, besides Cutknife creek, and a tributary from the west. That in the creeks and ravines might almost as well not be there so difficult is it to attain. All water is good and wholesome. There are no natural water-powers, but Cutknife creek could be dammed and a head of upwards of 100 feet obtained; this would, of course, be an expensive undertaking, but a great power could be developed in this way no doubt. The lowest stage of this stream is about 3 feet in width, 6 inches in depth, with a flow of one mile an hour; the average of the year is probably three times this amount. There is no land in the township liable to flooding. General indications are that the climate is dry and frosty. I do not believe that grain can be successfully raised in this locality. As to fuel, there is certainly quite a bit of it in the ravines mentioned, if it can be got out, but not readily available in the township, I can assure you; elsewhere I do not know where it can be readily obtained. No seams of coal or lignite were observed. No places where quarries might be opened up were noticed, nor rock exposures. There does not seem to be any rock in the bank or escarpment (3rd prairie steppe) of the Eagle hill. I carefully examined several tremendous hills that run back into it for this very purpose. No valuable minerals were discovered. Ducks and prairie fowls were fairly abundant.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 50.—The Onion lake trail from Battleford runs through the township from the southeast corner to the centre of the west boundary, and most of the way is a very good road. The soil is a rich clay and sandy loam with subsoil of clay, and in some places sand and gravel combined with clay, the high ground generally stony. Suitable for grazing and hay. The surface is slightly undulating and it is about two-thirds prairie and one-third willow and poplar scrub. There are numerous small ponds and marshes. The timber is small poplar, seldom exceeding 5 inches in diameter and willow brush, the latter very dense where it occurs. The timber is scattered in small clumps or bluffs. Plenty of hay can be obtained round most of the marshes throughout the township, but it is most plentiful in a valley, about 75 feet below the general surface, running through sections 7, 8, 9 and 13. There is plenty of fresh water in marshes. Turtle river, a rapid stream about 50 links wide and three feet deep, touches the northeast corner of the township; its water is good and fresh. Englishman river

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 21.

runs through the west sides of sections 7 and 6 into the Saskatchewan and contains good water. It is a rapid stream about 25 links wide and two feet deep. The land is not liable to be flooded by either of these streams. This year there have been strong northerly gales with snow and rain up to May 25. I am unable to state whether there are summer frosts or not. No water-powers exist in the township. The fuel is small poplar, obtained from the clumps scattered about. No stone quarries or minerals were observed. There are numerous ducks and prairie chicken, and deer are said to be plentiful. The valley of Englishman river is broken by land slides which appear to be of quite frequent occurrence. This township is generally better adapted for stock raising than for agriculture, though some parts of it are suitable for the latter.—*T. S. Gore, D.L.S., 1903.*

Township 51—(East outline.)—The township is generally hilly on the east boundary. This boundary crosses Turtle lake river at the north boundary of sections 19 and 24. The stream is too rapid to be fordable for men at this point, and owing to its soft banks it is not fordable for horses for miles above or below this boundary line. The country from this point south is generally hilly open prairie with scrub in the ravines and numerous bluffs of small poplar to the east. As one approaches the south side of the township the land is rolling and less hilly. The soil is generally deep black loam with variable light subsoil. Firewood is not very abundant and I do not know of any building timber.—*J. J. Dalton, D.T.S., 1903.*

(Subdivision.)—The branch of the Onion lake trail to Emmaville post office passes through the southwest corner of this township. It is rather a poor road. The soil is black loam and sandy loam, and is suitable for general mixed farming. There is considerable open prairie through the middle of the township, but the eastern and western parts are nearly all covered with brush and poplar scrub, and through the northern and western tiers of sections there is sufficient poplar suitable for building for local use. There is good hay along the small creek running into Turtle river and adjoining small sloughs scattered throughout the township. The water is fresh and good generally. A small creek, apparently permanent, and about 10 feet wide and 3 feet deep, flows in from the north in section 33 and through the middle of the township into Turtle river in section 12. Turtle river, about 1 chain wide and 4 feet deep, flows in and out along the east boundary of the township. Climate was wet and cold this summer, but no indications of summer frost were seen. The only fuel is poplar which can be obtained in all parts of the township. There are no stone quarries and no minerals. There are no water-powers in the township. Prairie chickens and ducks were the only game seen.—*T. S. Gore, D.L.S., 1903.*

Township 52—(East outline.)—This township is very hilly, with much scrub along the northern boundary, but along its eastern boundary the land is open rolling prairie, with light scrub and a few scattered sloughs for 2½ miles, where the land becomes low, with lakes on both sides of the line. On sections 13 and 18 there is a large lake 36 chains across and about a mile and a half long. South of this the land is low and wet for a mile, then it becomes a succession of knolls and ridges to the southeast corner of the township and extending far on each side of the eastern boundary. There are several bluffs of good spruce and poplar timber suitable for building. Wood for fuel is not very abundant here, but may be found to the northeast within a few miles. Soil generally is black loam 8 to 10 inches deep, with a variable but light subsoil.—*J. J. Dalton, D.T.S., 1903.*

(North outline.)—Excepting section 36, which is level prairie, the north boundary of this township runs through a rolling country covered with bluffs of poplar 6 inches in diameter, interspersed with small prairie patches, and thick willows around the marshes and lakes. In sections 31, 32, 33 and 34, the soil is a black or sandy loam 6 to 18 inches deep, with a subsoil of clay and gravel. In sections 35 and 36, the soil though lighter is still of good quality. Large boulders of grey granite appear fre-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

quently on the surface. A creek enters this township in section 32 and flowing southerly through a narrow valley it connects lakes on the north and south side of the base line. Another and more important stream, the outlet of Round Sandy lake, in township 53, range 20, crosses the north boundary of section 35. It empties into another large lake about 3 miles south of the line. These streams and lake give a good supply of fresh water in these townships, where good hay is also found. It is a good country for stock raising, as is also the valley of the Englishman river in range 22, and in which Emmaville is situated. West of the outlet of Round Sandy lake the hills rise to a height of 135 feet and are thickly timbered with poplar. A new wagon road from Emmaville crosses this township from west to east at an average distance of 2 miles from the north boundary of the township.—*A. Saint Cyr, D.L.S., 1903.*

Range 22.

Township 5.—The township is high rolling bare prairie, with many large sloughs. Ranchers who live in the township cut their supply of hay from township 5, range 21.—*G. J. Lonergan, D.L.S., 1902.*

Township 6.—The township is traversed by a large ravine in the bottom of which flows Frenchman river. A few settlers are located along the river and ranching is their only occupation. Small bluffs of timber are found in the valley.—*G. J. Lonergan, D.L.S., 1902.*

Township 7.—The township is high, rolling and bare prairie. One large creek flows through the centre of it in a southerly direction, discharging its waters into Frenchman river. Large flats in the valley can be easily irrigated from the above mentioned creek. Some small bluffs of timber are found on the hill sides. East End post office is situated on section 32.—*G. J. Lonergan, D.L.S., 1902.*

Township 35.—This township is situated about 110 miles west of Saskatoon, the nearest railway town, and 60 miles southwest of Battleford, the nearest post office and supply station, and is accessible from both places by a good wagon trail—that from Battleford passing through the township from northeast to southwest. In the northerly and easterly parts of the township the soil is a heavy clay with clay subsoil, but in the more southerly and the western parts the soil is quite sandy with clay or in some places gravel subsoil. The northern portion is high and rolling to hilly, but about two miles from the north boundary the land becomes more level and considerably lower. Towards the south boundary the surface is in places slightly broken by sandy knolls and ridges. No timber or scrub of any description was found. Numerous hay marshes were found in all parts of this township and some of them are of very considerable extent, covering from 50 to 100 acres. One of the largest occurs on sections 22 and 27 adjoining the Battleford and Fort Walsh trail. This hay marsh or meadow like most of those in the district is composed of the very common coarse marsh hay of the prairies, but upon sections 11, 14 and 15 there is an extensive meadow of blue-joint grass of very fine quality and heavy growth. The largest body of water is an alkaline lake covering part of sections 9 and 10. Several other small alkaline sloughs occur on sections 16, 8, 17, 18, 20, 29 and 30, and on section 16 close to the trail, a small fresh water slough was found within 100 feet of another very saline pond. This was at the end of September, the driest part of the season. There is no doubt that during the spring and early part of the summer fresh water would be plentiful enough in the sloughs and marshes. From what has already been said it may well be inferred that no water-power exists upon the township. At the time that this township was subdivided the weather was pleasantly warm during the days and cool at nights. From the luxuriant growth of hay in the meadows and wild flowers upon the prairie, I judge that the climate is not unsuited for the production of wheat, oats and most other cereals and root crops commonly grown in the Northwest Territories. No fuel of any

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

description is found and the nearest local supply exists along the southwestern shore of Tramping lake, where a very limited quantity of poplar and dogwood was found. A somewhat more abundant fuel supply is found in what is known as 'the 60-mile bush,' situated in township 35, ranges 15 and 16, but even this is not at all sufficient for the future requirements of the country for more than a very short time. Coal appears to be the only future fuel supply of this locality and so far as now known the Saskatchewan river is the nearest locality from which it can be obtained. No stone quarries and minerals of any description were found. Feathered game was observed to be very plentiful and more especially brant geese with wavies and numerous kinds of duck—notably mallards. Sand-hill cranes were seen occasionally but no prairie chickens were observed. A few antelopes are found in the locality, though none were observed in this township. The same note would also apply to badgers, foxes and prairie wolves—the burrows of which are everywhere to be seen in the lighter descriptions of soil.—*J. W. Tyrrell, D.L.S., 1903.*

Township 36.—This township is situated about 110 miles west of Saskatoon, the nearest railway town, and 60 miles southwest of Battleford, the nearest post office and supply station, and is accessible from both of these places by good wagon trails, both passing directly through the township, that from Saskatoon in an easterly and westerly direction and that from Battleford cutting across the southeast corner of the township. The soil of the township for the most part is composed of heavy clay with clay subsoil and is, I judge, suitable for the growing of wheat or general farming purposes. Numerous hay marshes exist, in which a very rank growth of hay was found, consequently it would be also well suited for grazing land. The surface is open rolling prairie with occasional elevations of from 50 to 75 feet above the surrounding country, with numerous hay marshes in the lower bottom lands. No timber of any description is found upon the township, the nearest timber being in the valley of Tramping lake, 12 or 14 miles to the southwestward, where a limited quantity of poplar and dogwood was found growing, and from which we obtained our fuel supply. The numerous small hay marshes are scattered pretty generally over the entire township, quite a number being located on the more easterly sections and a large marsh being located on sections 28, 29 and 32. The hay is the ordinary marsh hay of the prairie. During the dry season of the year water is a scarce commodity, but in the spring and early part of the summer abundance of fresh water may be found in any of the hay marshes and throughout the season of 1903 a few grassy fresh water sloughs were found on sections 4, 5, 8, 23, 26 and elsewhere. No alkali waters were met with upon this township and though during the later part of the summer water of any description was scarce, it is very probable that during a wet spring season very considerable areas might be flooded, particularly those parts already described as hay marshes, as the heavy clay must have a tendency to hold surface water for a considerable length of time. As may be inferred from the description already given, of this township, no water-power exists upon it. Judging from the general appearance of the township and heavy growth of hay and other forms of vegetation, such as numerous wild flowers, &c., I am of the opinion that the climate in this locality is not too severe to admit of the raising of wheat, oats and many other farm products. As this township was surveyed by me during the latter part of September I am not in a position to report from personal knowledge in regard to the occurrence or otherwise of summer frosts. At the present time the most readily available fuel in this locality is, as already mentioned, in the valley of Tramping lake which extends through townships 35, 36, 37 and 38, range 20, and is therefore but a few miles to the eastward. The quantity of timber in this valley is, however, very limited and not at all sufficient for the future needs of the country. A more extensive area of timber known as 'the 60-mile bush' exists on townships 35, ranges 15 and 16, west of the third meridian, and it is from this locality chiefly that fuel is now obtained for the country immediately surrounding it within a radius of 30 or 40

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

miles. So far as is at present known no coal or lignite veins occur in the township, but with improved transportation facilities fuel of this description may be obtained from the Saskatchewan river valley. No stone quarries or minerals were found. The only description of large game now found in this township is the antelope, a few of which are scattered over the prairie. Judging from the numerous and deep trails, everywhere met with on the prairie, this locality was evidently inhabited by countless numbers of buffalo, but these have of course now passed into history. Of feathered game there is quite a variety, chiefly wild ducks which are found in great numbers upon almost every slough, and at certain seasons of the year geese are also very numerous. Prairie chickens are occasionally met with, though less numerous on this township than in other localities where a certain amount of timber or scrub is found.—*J. W. Tyrrell, D.L.S., 1903.*

Township 37.—This township is situated about 110 miles west of Saskatoon, the nearest railway town, and 55 miles southwest of Battleford, the nearest post office and supply station, and is accessible from both these places by fairly good wagon trails, that from Battleford passing through the southwestern part of township 38, range 21, and that from Saskatoon passing through township 36, range 22. The trail leading from Battleford to this township is rather the better one of the two, and the distance being much shorter, it is the more advantageous route. The soil is composed chiefly of heavy clay with clay subsoil, and in some of the higher localities contains many boulders. Like township 38, this one is also well suited for grazing purposes, but I judge that it is also suited for general farming, more especially the growing of hay, wheat, oats and other cereals. The very heavy character of the soil would rather unfit it for the growing of root crops. The surface is open prairie, no timber or scrub of any description grows upon it. The eastern and southern parts of the township are quite level, but the central and northwestern parts are very much broken and hilly, and a large grassy lake of slightly alkaline water lies on sections 19, 20, 29, 30, 31 and 32. About the shores of this lake there is a considerable area of low flat land which appears to be flooded during seasons of high water. These low flats consist of soft muddy clay, so soft that in most places it is impossible to reach the water of the lake. One of my horses in attempting to reach the lake became so deeply mired that it was with the greatest difficulty, after many hours of hard labour that we were enabled to extricate him. The township is particularly well supplied with marshes of natural hay, the chief ones being located upon sections 3, 4, 10, 14, 15, 22, 23 and 33. The hay in these marshes is coarse and rank, but is such as is commonly used in the North-west Territories for the wintering of live stock, and appears to form an excellent fodder. In all, I should judge there are about two square miles of natural hay meadows in different parts of the township, and the hill surface supports a good growth of prairie grass well suited for grazing purposes. The township is fairly well supplied with fresh water which may be found in all, or nearly all, of the hay marshes. The water of the large lake above referred to is not sufficiently fresh for drinking purposes, although it is only slightly alkaline. There are two small brooks, but during the month of October, when visited by us, they were dry or nearly so, water being found only here and there in pools in the stream bottom. One of these brooks runs through sections 9 and 16, discharging into the large lake. The other passes through sections 23, 26, 27 and 35, and flows into Muddy lake in the next township. During the spring and early part of the summer the township would be abundantly supplied with fresh water, and in places may be flooded over considerable areas. No water-power was found in the township. As the subdivision was done during the month of October, I am not in a position to report much in regard to climate, but believe that such is not too severe to admit of the production of all farm crops commonly grown in the districts of the North-west. Frosts were of course experienced at the time my survey was made, but I am unable to say whether there were summer frosts or not. There is no fuel in the

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

township, the nearest available supply being in the valley of Tramping lake. This, however, is extremely limited, and for a more abundant supply the Red Pheasant Indian reserve is the next most convenient source. Here large sized spruce, poplar and birch may be obtained, as well as in the other parts of the valley of the Saskatchewan river. Coal is not known to exist in this locality. No stone quarries were found nor minerals of economic value. The only large game in this township is the antelope, which is occasionally met with, but badgers, prairie wolves and foxes are quite numerous. Water fowl were very numerous upon the lake and marshes; great numbers of ducks and geese of many varieties being observed. No prairie chicken were met with.
—J. W. Tyrrell, D.L.S., 1908.

Township 38.—This township is situated about 110 miles west of Saskatoon, the nearest railway town, and 50 miles southwest of Battleford, the nearest post office and supply station, and is accessible from both of these places by good wagon trails; the one from Battleford passing through the southwesterly part of township 38, range 21, and that from Saskatoon passing through township 36, range 22. The trail leading from Battleford to this township is rather the better one of the two, and the distance being very much shorter, it is for the most purposes the more advantageous route of approach. The soil is chiefly a heavy clay containing boulders in some localities. In its present condition it is well suited for grazing lands, as the most part supports a strong growth of grass. It is, however, suitable for the raising of wheat, oats and other cereals commonly grown in the Saskatchewan district, though not very suitable for the raising of root crops. Being well supplied with fresh water, I consider this township particularly well adapted for grazing purposes. The surface is very much broken by numerous high ridges and deep ravines, most of which run in a northwesterly direction towards a large body of water known as 'Muddy lake,' occupying the northwestern part of the township. Many of the hills rise to elevations of from 75 to 100 feet above the bottom lands and the ravines are also deep, and in places quite precipitous. In some of these ravines a very limited quantity of scrub and small poplar and willows was found, sufficient for supplying our camp with fuel, but nothing of importance as furnishing anything in the way of fuel supply for the future. Hay marshes are not so numerous as in many other townships, but the general growth of the prairie grass was exceptionally strong and heavy in most of the valleys, as well indeed as on many of the uplands. While, therefore, the township produces abundance of grass for stock raising purposes, it contains comparatively little marsh hay. The township is exceptionally well supplied with water, the northwestern part of the township being occupied by what is known as 'Muddy lake,' which is so nearly fresh as to be quite well suited for domestic purposes. Besides this lake there are several small fresh water ponds scattered throughout the township, as well as three or four small fresh water brooks, all of which flow into 'Muddy lake.' The water of these brooks is exceptionally good for drinking purposes, containing, if any, only slight traces of alkali. The volume of these streams is very small, but the flow appears to be constant. Although some of these streams have very considerable falls, they are all of such diminutive size that they do not amount to anything as water-powers. As this township was subdivided during the fore part of October, I am not in a position to report very much in regard to climate, but believe that such is not unsuited to the production of all farm crops commonly raised in the district. Frosts were, of course, experienced at the time that my survey was made, but I am unable to say whether there were summer frosts or not. Of fuel, as already intimated, a very limited amount was found in several of the ravines, but for any more considerable supply, the nearest available is in the valley of Tramping lake, or that being exhausted, upon the Red Pheasant Indian reserve, where good sized spruce, poplar and birch may be obtained. Coal is not known to exist in the locality. No stone quarries were found nor any minerals of economic value. The only large game likely to be found on this or adjoining townships

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

is the antelope, which is occasionally met with, but the badgers, prairie wolves and foxes are quite numerous. Water fowl were very numerous on Muddy lake and the other smaller bodies of water. Great numbers of ducks of many varieties were seen as well as numerous brant geese and white wavies. A few prairie chicken were found about the willows and scrubs in some of the ravines.—*J. W. Tyrrell, D.L.S., 1903.*

Township 39.—This township may be most readily reached from Battleford, going out from that place southwesterly by the Sounding lake trail for about 20 miles, to where a less pretentious trail forks off to the left in a more southerly direction. Following this trail, which, though at first pretty plain and easily followed, becomes after a time rather faint, for about 22 miles the locality known about here as the 'Willows,' near KILLSQUAW lake is reached near the northern boundary of this township. This trail as well as the Sounding lake trail, is a very good one, and fairly smooth, with plenty of good water and good pasturage all along. The soils found in this township comprise a range from the lightest sand to the very heaviest clay soil ever encountered by me, and so hard that it cannot be removed at all without the aid of a pick-axe. These heavy clay soils found in this part of the North-west Territories, I believe to be of the cretaceous age, and I have no doubt that beds of this same kind of clay exist that will prove valuable in the manufacture of bricks, tile and cement, and perhaps for coarse pottery as well. The hay bearing lands in this township are found in the south part near Muddy lake, and do not comprise any great area. The very light land (soil) above spoken of is comprised in a tract of about 3 miles in length by 2 in breadth and adjoins KILLSQUAW lake on the southeast. Sections 13, 14, 22, 23, 24, 26, 27, 28 and 35 are more or less taken up with it, and the extent of it is about 3,000 acres. This land is almost useless and in many places has been blown out into hollows by the wind and piled up in small knolls. Some pasture, however, is found here and there over it. A few small patches of willow and choke cherry scrub and a few saplings of poplar and balm of Gilead were seen in this sand tract, but so limited in quantity and of so small a size that they have no present value, and are only spoken of here to show that a wooded growth is evidently possible if prairie fires could be suppressed. East of Battleford I travelled this spring in coming to make the survey of this and other townships, over tracts of land, now prairie, which I had to travel around in 1879 by reason of the timbered growth thereon, and this destruction and repression of the growth of trees is constantly going on. In the rest of the township excepting a strip bordering Muddy lake, which is both stony and saline and often loggy, most excellent soils of clay loam and sand loam are found, and granting sufficient moisture and freedom from frosts in summer, capable of producing good crops of any of the ordinary kinds grown in Canada. The surface of the township is practically all prairie of a gently rolling or undulating character, with no wooded growth other than the little scrub just mentioned. Bordering KILLSQUAW lake on the south and east is a tract of low ground in which considerable hay land was observed, say from 100 to 200 acres, which would probably cut from 1 to 2 tons per acre. I do not know the name of this grass, nor can I speak as to its quality for hay, but believe it would make good hay, it being neither the ordinary marsh or slough hay nor upland hay. A very good hay marsh is also found on sections 16 and 17, which would cut perhaps 30 tons to 50 tons of hay of good quality; elsewhere in the township hay is not plentiful. Abundance of water is found in this township, there being a good many fresh water marshes as well as the two large lakes mentioned. The water in these lakes is brackish, but all water in the township is perfectly good for stock watering purposes. No permanent streams are found in the township and no falls or rapids or other ordinary ways of developing powers by water are to be found. My opinion, based on appearances, is that the climate here is dry and that frosts occur in the summer season. No fuel is found in the township, and I do not know where any quantity can be obtained near by. No beds or seams of coal or lignite were observed nor any indications of any such. No beds of rock or

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

any places at which quarries could be opened out were seen, but all along the escarpment (3rd prairie steppe) paralleling and distant about three-fourths of a mile from the north side of Muddy lake great quantities of large stones of granitic and crystalline rocks lie strewn about from which most excellent building stones can be made. The escarpment mentioned as lying along and north of Muddy lake, undoubtedly represents the descent from the 3rd to the 2nd prairie plateau. The drop in elevation here is from 150 to 200 feet and is steep, rough, broken by coulees and very stony all along this hill. No useful minerals were seen nor any places noticed at which they might be expected to exist. A few antelope were seen, and on the lakes were seen immense numbers of ducks and other water fowl.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 40.—As Battleford is the outfitting place for the district in which this township lies, the best way to get to it is by way of the Sounding lake trail which leads out of the southwest of this town. About 43 miles south from Battleford on the trail a point will be reached which lies about three miles north of the central point of its north boundary. From here, as it is all smooth prairie for a long way all round, it will be easy to get to any point of the township that may be desired. The trail above mentioned is a good one to travel over with all conveniences of water, feed, &c., except wood, which after a few miles from Battleford is absolutely wanting. With the exception of a tract of from 1,500 to 2,000 acres extent lying in the northeasterly part, mostly in sections 25, 26, 27 and 28, in which the soil is a hard clay, generally saline, the soils found in the township are good clay loam and sand loams, and well fitted for the cultivation of all kinds of Canadian farm crops, if climatic conditions are right. The entire surface of the township is open prairie of a rolling character in general, with no wooded growth other than two or three willow bushes to be found on it. Considerable hay ground was observed in sections 3, 4, 8, 9 and 10 bordering the shores of a good sized lake, named by me 'Killsquaw lake,' because of an Indian story that long ago in the buffalo days, sixteen Cree women were surprised, in the absence of the men on the hunt, by a number of Blackfeet, cruelly murdered and thrown into this lake, they having taken their outfit to camp beside it, while the men chased the buffalo. Probably from 500 to 1,000 tons of hay could be gotten here, of a grass, however, unknown to me, but which I feel sure will make good hay. Small marshes and ponds are well distributed throughout the township, the greater part of them being fresh and the water I believe permanent in the most of them. There is a large marshy tract found in the hard clay area mentioned above, the water in which is saline and nasty, and the creek, a very small stream, flowing south from this to Killsquaw lake is also of a saline character, and the water in it bad. Killsquaw lake itself is a little brackish and of a queer flavour, but I believe it to be wholesome. I am certain its water is fit for stock of all kinds. There are no places or chances by which power can be obtained from water in the township. So far as the rainfall is concerned, there can be no doubt that in general it is very light in this district, though there were sufficient showers for all purposes this summer; and that summer frosts are also to be feared is probable. No fuel is to be found in the township, neither wood, coal nor lignite that I learned of and I do not know where any can readily be gotten outside of it. No rock was seen and no places at which quarries might be opened out were observed. No minerals of any economic value were found. No large game was seen, but ducks and other water fowl were seen in vast numbers in the lakes and marshes. This township would make an excellent all year round range for stock by the erection of large stables for shelter in winter. The pasture in the summer cannot be surpassed and there is a large amount of hay to be had for winter use.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 41.—The best way to reach this township is by the Sounding lake trail which passes diagonally from northeast to southwest through it; it is a good trail and well travelled. The soil is generally of a strong clay loam of the best quality and well suited to produce any ordinary farm crop, if climatic conditions are favourable. The

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

surface of this township is gently undulating and the whole of it is prairie. No wooded growth other than a few small willow bushes near the north boundary, is found in the township. There are no hay meadows but quite a bit of high land hay could be cut almost anywhere in the township. Water is not plentiful except in the northern part where there is a fair supply in ponds and the quality is good. There are no streams of permanent water and no water-powers. My opinion is that the summers will be found too frosty for successful grain growing. There is no readily available fuel that I have any knowledge of, nor any beds or seams of coal or lignite. There are no beds of stone or rock and therefore no quarries could be developed in the township. Quite a few surface stones were seen scattered about, which, so far as they would go would serve for the construction of walls for buildings. No economic minerals were seen or discovered. A few antelope were seen, and a few ducks also, other game being very scarce.—*Fred W. Wilkins, D.T.S., 1903.*

Township 42.—The only way this township can be at all easily reached is by way of the Sounding lake trail from Battleford. This trail which leads out southwest from Battleford should be followed for about 32 miles, then leaving it on the left hand, strike due west across the prairie about four miles when the township will be reached at or about its southeast angle. The travel on the trail is good and the four miles of prairie is high and dry, though a little rough. The soil throughout the township is good, being mostly a splendid clay loam of great fertility, capable of producing any ordinary farm crop grown in Canada, under favourable climatic conditions. This township is entirely prairie with no wooded growth of any kind, having an undulating or rolling surface in general. A couple of low gravelly ridges occur in the southern part but are no detriment to the sections in which they occur, and indeed may in future prove of great value for the construction of roads, concrete buildings, &c. There are no large meadows from which hay can be got in quantity, but a good deal of hay can be gotten here and there over the township, but the bottom is rough and would be very hard on a mowing machine; the soil being strong and heavy a very hard compact sod covering has resulted therefrom. Water is fairly well distributed and there is quite a quantity of it in the lakes and marshes and, so far as this season is concerned, is fairly permanent. Except that found in two small lakes in sections 19 and 30, the water in the township is good and wholesome. The lakes spoken of are saline and extremely vile smelling ones. There are no water-powers nor any chance of such a thing anywhere in the township. Indications point to a dry climate with a liability to summer frosts. Fuel is not readily obtainable as there is no wood in the township and none very near. No seams of coal or anything of that nature were discovered. No beds of rock were seen nor any place at which a quarry might be opened. No minerals of value were picked up, nor any places noticed at which there would seem to be any likelihood of encountering anything of that kind. A few antelope were seen and on the lakes found in the township were seen countless flocks of ducks and other smaller water fowl.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 43.—This township which lies nearly due west from the town of Battleford may be most easily reached from that place by taking the Sounding lake trail which leads out to the southwest. This trail is a good one to travel along, and by following it about 30 miles from Battleford and then turning off from it in a northwest course, a further journey of about eight miles over very fair prairie land brings one to the vicinity of its southeast corner, from which point any desired part of the township may be easily reached. The soil throughout is good, clay loam predominating, and under proper climatic conditions is capable of growing in abundance any crop commonly grown in Canada. The township is all prairie with no wooded growth whatever, having a gently rolling surface generally. In the northwest and southwest parts, a little hilly ground is found with a good many surface stones in

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

places. No large meadows are found in the township but quite a bit of hay for the first needs of settlers is scattered about in various places. All the water found in the township is good and wholesome and in general a fair number of permanent ponds and marshes are met with everywhere. The northeastern part of the township is, however, not so well provided for in this respect as the rest of the township. Nothing in the way of water-powers or possibilities of such exist in this township. From appearances the climate is dry and frosty. Fuel of any kind is not found in the township, neither were any indications of coal or lignite observed. Wood for any purpose is scarce in this locality and I do not know where any is to be readily gotten. I am told that there is wood along Battle river, two townships farther north. To the northeast also in township 44, range 21, in the valley of Cutknife creek there are some small groves of poplar of fair size, but to get at it is very difficult by reason of the depth and steepness of the ravines in which it grows. No exposures of rock were seen and no places at which quarries might be opened were observed. No useful minerals were found. No large game was seen but in the lakes in the southwest part great numbers of ducks of various kinds were seen, as well as other birds which frequent wet places. This township would make a fine summer range for stock, as the pasture is splendid and water fairly plentiful.—*Fred. W. Wilkins, D.T.S., 1903.*

Township 44.—This township may be conveniently reached from Battleford by the trail which leads through Poundmaker's Indian reserve. This trail which is an excellent one to travel over passes westerly along and a little to the north of this township. The distance from Battleford is about 36 miles to the nearest point of the township. All kinds of soil are found in the township except the very light and the very heavy, so that as an average the soil is very good indeed. In Ontario a tract of land like it in that respect, would be thought to be about as good as it could be and to be entirely suitable for all agricultural crops. The township is all prairie with no wooded growth except a little willow brush found about the two small lakes in the south part, and two clumps of willows found right on the north boundary in sections 34 and 35. There are no large hay-producing meadows, but, for all that, a deal of hay can be gotten in the township in narrow flats found along the several brooks and drainage courses, which are found scattered about over it. The township is well watered, there being brooks or permanent marshes everywhere and, with very trifling exception the water is all good and wholesome. There is one stream in the township which might be dignified with the name of creek, but is very small and there are no falls on it. The valley or trough through which it flows, however, is quite deep and it would be quite possible to dam it in such a way as to form quite a sized pond, say from 50 to 100 acres. The stream feeding this would not likely ever be less than 4 inches deep, 2 feet wide, one mile per hour, and how much larger than this it is in freshet time, and how long it continues high, I am unable to say. Perhaps the average discharge of the year might be double this, for I should imagine that it is not high more than a month in the spring. Suitable places to put in such a dam can be found on sections 25 and 26. Any indications which I saw pointed to a dry climate with probable summer frosts. This was not a good season to judge as to dryness, there having been continuous light showers all summer long in this district. No fuel is found in the township of any kind, nor were beds of coal or lignite noticed anywhere in it. I have been told that quite a bit of wood is to be had along Battle river about six miles to the north, but I cannot vouch for this. No beds of rock were seen nor any places suitable for stone quarries. No useful minerals were discovered or seen. No large game was seen but ducks were very numerous in the marshes and lakes. Since completing the survey of this township I have heard that three squatters have gone into it one of whom has opened up quite a large store, with the object of being ahead of settlement and to trade in the meantime with the Indians on the reserves near by, and the few white settlers to the east and north.—*Fred. W. Wilkins, D.T.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 22.

Township 50.—The Onion lake trail from Battleford runs through the township, and is a fairly good road, with good bridges. The soil is generally a good dark clay loam with clay subsoil, the higher ground rather stony. The surface is rolling, and is about two-thirds prairie and one-third covered with a growth of small poplar and willows. There are a good many small ponds and sloughs with fresh water. The valley of the Saskatchewan is very rough and steep, from 200 to 250 feet deep, and about a mile wide between the upland on either side. It cuts the township from the middle of the western boundary to the southeast corner. The timber is principally scrubby poplar up to eight inches in diameter, and a good deal of dense willow brush. There is a little cottonwood scattered along the south bank of the river that would be suitable for building purposes. A good supply of hay can be obtained from small flats around sloughs. The grass is very long and thick throughout the township, and could probably be made into hay on much of the higher lands. The township is abundantly watered by Englishman river, a rapid stream about 50 links wide and three feet deep; also by the Saskatchewan and numerous ponds. None of the township is liable to be flooded. The climate is variable, but does not appear to be much subject to summer frosts. No water-power exists. The fuel is small poplar scattered throughout the township. No stone quarries and no minerals were observed. Numerous ducks and prairie chicken and some deer were seen. This township is suitable for stock-raising in a small way and general farming.—*T. S. Gore, D.L.S., 1903.*

Township 51.—The Battleford and Onion lake trail passes through the southwest corner of this township, and is a fairly good road. In the two most easterly tiers of sections the soil is good, but in the western and middle parts the soil is more sandy and stony. The township generally is best adapted for grazing purposes. The eastern part of the township is timbered pretty well with poplar running from 2 inches to 10 inches in diameter. The middle part is open prairie, and the western part prairie with clumps of poplar and willow. There is a quantity of good hay extending along English river and lakes and many other hay flats around sloughs. There is plenty of water, fresh and permanent, in ponds and lakes, also in English river, which is a rapid stream about 40 links wide and three feet deep. Some of the hay flats in the vicinity of English river are liable to be flooded over quite large areas after heavy rains. There are no water powers. The summer was very wet and cool. The only fuel is poplar, found more or less on nearly every section in the township. There are no stone quarries and no minerals. Plenty of ducks and prairie chickens during the season are to be found all over the township.—*T. S. Gore, D.L.S., 1903.*

Range 23.

Township 35.—A trail from Battleford to the forks of Red Deer river passes about a mile and a half east of the southeast corner of this township. With the exception of the crossing of the northern end of Tramping lake—which is liable to be soft in a wet season—this trail is in very good condition and affords the most convenient route for reaching the township. The soil is chiefly clay with a deposit of black or clay loam on the surface and is a first-class wheat growing country. The surface of the township is all rolling prairie—no timber whatever. Hay can be cut around all the sloughs, a good many of which go dry in the summer, but the prairie grass is short and thin. No large hay marshes were met with. The water in all the sloughs was found to be fresh but in the open lakes, slightly alkaline. No running water. In September there was more or less frost every night, but the days were fine and warm. A limited supply of fuel can be obtained near Tramping lake, but there is no quantity nearer than Battle river. There are no stone quarries. Ducks and geese were numerous and a few antelope.—*H. B. Proudfoot, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

Township 36.—A trail crossing the Battleford and Swift Current trail near the 9th correction line, passes through this township, affording the most convenient route for reaching the same. This trail is very old and faintly marked in some places but is fairly dry. There are some steep hills on it at the south end of Tramping lake. The soil is all clay, in some places an alluvial deposit of clay loam of various depths, an excellent wheat soil. Surface is all rolling prairie, no timber whatever. Hay can be cut around most of the sloughs, but the prairie grass is short and thin. There is no running water. The water in the small sloughs was found to be fresh, but very alkaline in the open lakes. There is no water-power. Climate: in the beginning of September the weather was very fine, with heavy frost every night. A small quantity of dry wood was found around Tramping lake in range 20; no other fuel was found any nearer than that. There are no stone quarries or minerals. Game: ducks and a few antelope.—*H. B. Proudfoot, D.L.S., 1903.*

Township 37.—The Battleford and Tramping lake trail passes a few miles east of the east boundary of this township, affording the most convenient route for reaching it. The soil is mostly clay with an alluvial deposit of clay loam, eminently adapted for raising all kinds of grain. The surface of the township is all open rolling prairie and there is no timber. Good hay can be made around most of the sloughs; a considerable hay marsh occurs on the south tier of sections which was comparatively dry at the time of survey (October). With the exception of the large lake on the west boundary, which was very alkaline, the water in all the ponds and sloughs was fresh. No running water was met with. In the second week of October, 1903, the days were bright and warm but there were very heavy frosts every night. There is no fuel nearer than Tramping lake in range 20, where there is a limited supply of poplar and maple. There are no stone quarries or minerals. There were a few antelope, ducks and geese.—*H. B. Proudfoot, D.L.S., 1903.*

Township 38.—The Battleford and Tramping lake trail passes about 10 miles east of the southeast corner of this township, affording the most convenient route for reaching it. The soil is mostly clay with an alluvial deposit of clay loam, well adapted for wheat growing. The surface is all open prairie, on the west side of the large lake rolling and on the east side hilly. There is no timber of any kind. Hay can be cut around the sloughs and ponds, but there are no marshes of any great extent. The water in all the small lakes and sloughs is fresh but slightly alkaline in the large lake. There is no running water of any quantity. In the first part of October, 1903, the days were bright and warm but we had heavy frosts every night. There is no fuel in the township. The nearest was the dead timber around Tramping lake. There are no stone quarries or minerals. There are a few antelope, ducks and geese were numerous, but no prairie chickens were seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 39.—This township is reached from the Battleford and Sounding lake trail, which can be traced into township 41, range 22. This trail is in good condition. The township is open undulating prairie in the northern and western parts, with soil varying from a sandy loam to clay, second and third class, and suitable in most cases for farming. The southeast third of the township is open prairie, very rough and broken by ragged hills and lakes, and with stones and alkali in the hollows. The soil is mostly an alkaline clay, about fourth class. This portion of the township would be suitable for sheep ranching. Very little timber exists except a few poplar, measuring up to six inches in diameter, growing in the northern parts of sections 27 and 28 on the slope leading to Jay lake. The water in the lakes is very alkaline. Fresh water is scarce except in sloughs. A small fresh water creek flows out of the northwest quarter of section 28 into Jay lake. Another fresh water creek flows out of section 24 into End lake. The fuel is dried poplar procured from the northern parts of sections 27 and 28. No water-power exists in the township and no stone quarries, no hay and no indications of minerals were found. The climate is very good. The game found is for the most part wild ducks. Section No. 1 is open prairie, broken by hills and ravines, the hollows containing stones, wild cactus and traces of alkali. A wagon trail

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

crosses the southeast quarter of this section. Section No. 2 and the east half of section No. 3 are very rough and broken by ragged hills and gorges. Stones occur on the top of these hills. The hollows show traces of alkali. These are suitable for sheep ranching. The west half of section 3 is nearly covered by Ear lake. Sections Nos. 4, 5, 6, 7, 8 and 9 are open gently rolling prairie. Sections 6 and 7 contain many small sloughs. Sections 5, 9, 8 and 4 have a slope towards Ear lake; they are all suitable for farming. The northwest quarter of section 10 is open rolling prairie with gravel ridges; it is suitable for pasturing. The southwest quarter is broken by Ear lake; good pasture exists about this lake. The east half is broken by hills and ravines and is suitable for sheep ranching. Sections 11, 12, 13, 14, 15 and the east half of 16 are open prairie, very rough and broken by ragged hills and ravines containing stones, alkali and wild cactus. These are suitable for sheep ranching. Section 14 and the northwest quarter of 13 are broken by End lake. The west half of 16 and the north half of 17 are low and wet and contain many alkali sloughs and loose stones. The northwest quarter of 17 is broken by Reed lake. The south half of 17 is gently rolling prairie with scattered patches of willow scrub, and is suitable for farming. Section 18 is broken in the north half by Reed lake; the remaining part is open rolling prairie and suitable for farming. Sections 19 and 20 are open high rolling prairie with gravel ridges, and are suitable for pasturing. The south half of 19 and southwest quarter of 20 are broken by Reed lake. Section 21 is open high rolling prairie with gravel ridges and suitable for sheep ranching. Sections 22, 23 and 24 are very rough and broken by ragged hills and ravines, and are suitable for sheep ranching. Traces of alkali exist in the hollows. Section 23 and the west half of 24 are nearly covered by End lake. Section 25 and the south half of 26 are broken by a coulee containing ragged hills, stones and alkali. The north half of 26 is open rolling prairie, and suitable for pasturing. Section 27 and the south half of 28 are open, gently rolling prairie with many sloughs, and suitable for farming. The northwest quarter of 28 is broken by a ravine leading to Jay lake and the northeast quarter is broken by the lake itself. Some poplars grow on the south side of this lake measuring up to six inches in diameter. A fresh water creek flows out of the northwest quarter into Jay lake. Sections 29 and 30 are open rolling prairie suitable for pasturing. Sections 31, 32 and 33 are open gently rolling prairie and suitable for farming. The south half and northeast quarter of section 34 are broken by Jay lake. The northwest quarter is open gently rolling prairie suitable for farming. Section 35 is broken in its west half by Jay lake; the land adjoining the lake is rough, but back from the lake is open gently rolling prairie suitable for farming. The east half of section 35 and the west half of section 36 are broken in the central part by a ravine leading from Jay lake. Back from the ravine the land is suitable for farming. The east half of 36 is broken by a deep coulee, containing stones and alkali. It is the same coulee which crosses township 40 diagonally, and seems to terminate in End lake, although there are several gaps which lead towards Muddy lake.—*Lennox T. Bray, D.L.S., 1903.*

Township 40.—This township is reached by the Battleford and Sounding lake trail which can be traced into township 41, range 22. No traces of this trail could be found in township 40, range 23. Sections 1, 12, 13, 14, 23, 24, 25, 27, 26, 28, 29, 30, 31, 32 and 33 are rough and broken by a large coulee which contains alkaline sloughs, stones and willow scrub. That portion of the township north of this coulee is open nearly level prairie and suitable for farming. The portion south of the coulee is open gently rolling prairie and in most cases suitable for farming. The soil is a deep rich loam with a sandy subsoil and classed first, second and third. Poplar timbers occurs to a limited extent in the ravines in the eastern part of section 33 and on the slope of the coulee in the northern parts of sections 28 and 29. Some trees were found measuring up to 8 inches in diameter. The water in the lakes of this township is very alkaline,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN — RANGE 23.

but fresh water is found in the sloughs which in the central southern part are very plentiful. A fresh water spring creek with its source in section 27 flows northwesterly across sections 28, 33 and 32 into Gull lake. A good hay meadow and marsh covers the eastern part of section 26, the southern part of section 36 and most of section 25, and hay also exists on the northeast quarter of section 4. The fuel is dried poplar procured from the northern parts of section 28 and 29. There are no water powers in this township, no stone quarries and no indications of minerals. The game is wild ducks, muskrats and antelope. The climate is very good. Section No. 1 is broken in its east half by a large coulee containing stones and alkaline sloughs. Its west half is open rolling prairie suitable for farming. Sections 2 and 3 are open gently rolling prairie suitable for farming. The northwest quarter of section 3 and the northeast quarter of section 4 are broken by a large marsh with good hay on its western side. The west halves of sections 4, 5 and 6 are open rolling prairie with some sloughs and are suitable for farming. Sections 7, 8 and 9 are open rolling prairie with a number of sloughs; these sections are suitable for farming. The southwest quarter of section 10 is nearly covered by Microbe lake, the remainder of the section and section 11 are open rolling prairie with a number of sloughs and are suitable for farming. Section 12 is broken by a large coulee containing alkaline sloughs and stones in its central part and by sand hills in its western part. The central northern part is covered by Sink lake. The remaining eastern part is open gently rolling prairie. Section 13 is broken in its west half by a large coulee containing lakes, stones and alkali. Sink lake covers the most of this half. The east half is broken on its west side by ravines leading to the coulee. The rest of this half is open gently rolling prairie suitable for farming. Section 14 is broken in its north half by a coulee. Gordon lake covers a part of the northeast quarter. The southeast quarter is broken by sand hills. The southwest quarter is open gently rolling prairie with some sloughs and is suitable for farming. Section 15 is broken in its northeast quarter by small sand hills, the rest of this section is open gently rolling prairie with some sloughs and is suitable for farming. Sections 16, 17 and 18 are open rolling prairie with a number of sloughs and are suitable for farming. Sections 19 and 20 are rolling prairie with scattered patches of willow and poplar scrub; they are suitable for farming. Section 21 is open gently rolling prairie with some sloughs, and is suitable for farming. Section 22; the north half and southeast quarter are broken by coulees and sand hills. The southwest quarter is open gently rolling prairie and suitable for farming. Section 23 is nearly all broken by coulees. Gordon lake covers most of the southeast quarter; this section is suitable for pasture land. Section 24 is broken in its southwest quarter by the coulee and ravines. The east half and northwest quarter are open gently rolling prairie suitable for farming. Section 25 is nearly level prairie covered by a good hay meadow and marsh. Section 26 is broken in the southwest corner by ravines running to the coulee. The rest of this section is open nearly level prairie suitable for farming. The east half is partly covered by a hay meadow. Section 27 is open nearly level prairie in its northeast quarter and suitable for farming. The rest of this section is broken by ravines and coulees. A fresh water spring creek flows out of this quarter into section 28. The southwest quarter of section 28 is gently rolling prairie with scattered bluffs of willow and poplar scrub. The remainder of the section is broken by the coulee and sand hills. Some poplar grows on the north half of this section measuring up to 8 inches in diameter. A fresh water spring creek flows across the north half. Sections 29 and 30 are gently rolling prairie in their south halves with scattered patches of willow and poplar scrub and are suitable for farming. The north halves are broken by sand hills and ravines running to a coulee. Some poplar grows on the north half of section 29 measuring up to 8 inches in diameter. Section 31 is broken by sand hills. Gull lake covers a part of the northeast quarter. Section 32 is in the coulee. It is broken in its south half by sand hills and the north half by Gull

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

lake. A fresh water spring creek flows across the northeast quarter into Gull lake. Section 33 is broken by deep ravines and a coulee; in some of the ravines poplars were found measuring up to 8 inches in diameter. The northeast quarter is open nearly level prairie. A fresh water spring creek flows northwesterly across the south half of this section. The southwest corner of section 34 is broken by ravines running to a coulee. The rest of this section and section 35 are open nearly level prairie and suitable for farming. Section 36 is open nearly level prairie in its north half and southwest quarter and is suitable for farming. The southeast quarter is nearly covered by a good hay meadow and marsh.—*Lennox T. Bray, D.L.S., 1903.*

Township 41.—This township is reached by the Battleford and Sounding lake trail, which can be traced into township 41, range 22, but through township 41, range 23, no traces of it could be found. The trail is in good condition. The soil varies from a light loam with a white sand subsoil to a heavy loam underlaid by clay. The eastern part is open and nearly level prairie, and although the soil is light, indications point to its being suitable for farming from the abundant growth of grass. The western part is broken by a large coulee which contains lakes, stones and alkali, with many deep ravines leading to it. Poplar trees are found in some of the ravines measuring up to eight inches in diameter. This part of the township is suitable for ranching. The only timber in the township grows in the ravines in the western parts of sections 4, 9, 8 and 18; it is poplar and will measure in some cases up to eight inches in diameter. The supply, however, is scarce. Some hay, though of poor quality, occurs on sections 7 and 18 about the lakes; also on section 31 in the flats of the coulee. The water in the lakes located in the coulee is very alkaline. The water in Muskrat lake is less alkaline and can be used. A fresh water spring creek rising in section 33 flows westerly across sections 32 and 31; another fresh water spring creek with source in section 4 flows westerly into Gull lake. Another creek flows out of Muskrat lake southerly, leaving the township near its southeast corner. The water in the sloughs in the higher parts of the township is fresh, while in the coulee it is very alkaline. The fuel is dried poplar, procurable from the ravines in section 4. There are no water-powers in this township, no stone quarries and no indications of minerals. The climate is good. The game is wild duck, geese, muskrats and antelope. Sections Nos. 1, 2, 3, 10, 11, 12 and the east halves of sections 9 and 4 are open and nearly level prairie suitable for farming. Section 13 is open level prairie, broken by Muskrat lake, and is suitable for farming. Sections 14 and 15 are level prairie with a few patches of willow scrub, and is suitable for farming. Sections 16 and 17 are open gently rolling prairie, suitable for farming. The southwest quarter of 17 is broken by a coulee and ravines. Some poplars occur in these ravines up to six and eight inches in diameter. The west half of section 20 is open rolling prairie. The east half of section 20 and sections 21 and 22 are gently rolling prairie suitable for farming. Sections 23 and 24 are open gently rolling prairie. Section 23 is broken in its east half by Muskrat lake, and section 24 is broken in its southwest quarter by the same lake. These sections are suitable for farming. Sections 25, 26 and 27 are open gently rolling prairie, with some sloughs, and are suitable for farming. Sections 28 and 29 are open rolling prairie suitable for ranching. Sections 30, 35 and the east half of 34 are open gently rolling prairie, and suitable for farming. The west half of section 34 and sections 33 and 32 are prairie broken by ravines and hills, and are suitable for ranching. A deep ravine starting in section 33 runs westward across sections 32 and 31. This ravine contains poplar up to six inches in diameter and a fresh water spring creek. The west halves of sections 4 and 9 are very rough and broken by deep ravines containing poplar up to eight inches in diameter. They are more suitable for ranching. Section 5 and the east half of section 6 lie in a large coulee and are very rough and broken by high hills and Gull lake. The west half of section 6 is very rough and broken by sand hills. Section 8 is

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

very rough and broken by a coulee and deep ravines containing poplar up to eight inches in diameter. Section 7 is very rough and broken in its eastern half by deep ravines. The west half is in coulee flats and is marshy and covered by alkali. Some hay, though of poor quality, grows on these flats. The northwest quarter is broken by Lonely lake. Section 18 is broken in its west half by Lonely lake, and this half is in the flats of a coulee which is covered with alkali, but some hay grows in it. The east half of section 18 is broken by deep ravines running a coulee and deep ravines. A fresh water spring creek flows westerly across section 31. are open high rolling prairie broken to some extent by ravines, some of which contain poplar up to eight inches in diameter. The west halves are very rough and broken by a coulee and deep ravines. A fresh water spring creek flows westerly across section 31. These sections are suitable for ranching. This coulee which starts in the south boundary of section 4 and breaks the western tier of sections, contains alkaline sloughs and stones. Its banks are high and very rough and broken. It is known by the name of the 'crooked valley.'—*Lennox T. Bray, D.L.S., 1903.*

Township 42.—This township is reached by the Battleford and Sounding lake trail which can be traced into township 41, range 22. This trail is in good condition. The soil varies from a deep rich loam underlaid by a sandy clay subsoil to a stiff clay underlaid by gravel. The southeastern and central parts of this township are open and nearly level prairie and suitable for farming. The northeastern part is open prairie broken by numerous hills and some sloughs. This part is suitable for pasture land. The western part is rough open prairie broken by ravines and hills with stony ridges and suitable for pasture land. Timber is scarce. The ravines in the western parts of sections 6, 7 and 18 contain poplar measuring up to 8 inches in diameter. The supply, however, is very limited. Hay of a fair quality exists in the northwest quarter of section 32 and the southeast quarter of section 25. There is no water in the southeastern part. The central and northern parts have occasional sloughs containing fresh water. A fresh water spring creek flows out of section 26 into Clear lake, which is also fresh water. The water in Scrub and Schmidt lakes is very alkaline. A good fresh water spring creek flows out of section 18 southwesterly through section 7. Another spring creek with its source in section 5 flows westerly across section 6. The fuel is dried poplar procured from the ravines in the western parts of sections 6, 7 and 18. There are no water-powers in this township, no stone quarries and no indications of minerals. The climate is good. The game found is for the most part wild ducks. Sections 1 and 2 are open nearly level prairie suitable for farming. Sections 3 and 4 are open gently rolling prairie. A low ridge of hills crosses the southeastern corner of section 3. These sections are suitable for farming. Sections 5 and 6 are high rolling prairie broken by small hills and ravines and are suitable for ranching. A ravine containing poplar up to 8 inches in diameter, starting in section 5, crosses the north half of section 6 in an easterly and westerly direction. A small spring creek flows down this ravine. Section 7 is very rough and broken in the northeast part by a coulee and the west half by a deep ravine, containing poplar up to 8 inches in diameter. A spring creek flows down this ravine. The southeast quarter is broken by hills and is suitable for ranching. Section 8 is broken in the west half by a coulee. The east half is open rolling prairie suitable for ranching. Sections 9 and 10 are open gently rolling prairie suitable for farming. Sections 11, 12, 13, 14, 15 and 16 are open nearly level prairie suitable for farming. A low ridge of hills crosses the northern parts of 14 and 15. Section 17 is open rolling prairie in its east half and suitable for farming. The west halves of sections 17 and 18 are rough and broken by a coulee, ravines and hills with stony ridges. They are suitable for ranching. A ravine running southerly out of west half of 18 contains poplar up to 8 inches in diameter. Fresh water spring creek flows in this ravine. Sections 19 and 20 are open prairie broken by hills with stony ridges, and are suitable for ranching. Section 21 is is broken in

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

the northwest part by small hills. The remaining part is open rolling prairie suitable for ranching. Section 22 is open gently rolling prairie suitable for farming. Sections 23, 24, 25 and 26 are open prairie, rough and broken by small hills and sloughs and are suitable for ranching. Sections 25 and 26 are broken in the northeast and northwest quarters by Clear lake. A fresh water spring creek flows out of the northwest quarter of section 26 into this lake. Section 27, except for a low range of hills running northeast from the southwest corner is nearly level prairie and is suitable for farming. Section 28 is open rolling prairie in the north half and broken by hills in the south half and is suitable for ranching. Section 29 is broken in the east half by small hills, but the west half is open rolling prairie and suitable for farming. Sections 30 and 31 are open prairie, rough and broken by sloughs and hills with stony ridges and suitable for ranching. Section 32 is open prairie broken in the west half by small hills and in the east half by Scrub lake. Section 33 is open nearly level prairie in the north half and gently rolling prairie in the south. A small hay meadow exists on the northwest quarter. The western side is broken by Scrub lake. This section is suitable for farming. Section 34 is open gently rolling prairie with many sloughs. A low range of hills crosses the northeast quarter. Section 35 is open gently rolling prairie with many sloughs in the north half and southwest quarter. The southeast quarter is nearly covered by Clear lake. This section is suitable for ranching. Section 36 is rough and broken by hills and sloughs in the south half. The southwest quarter is broken by Clear lake. This half is suitable for ranching. The north is open gently rolling prairie, and suitable for ranching.—*Lennox T. Bray, D.L.S., 1903.*

Township 43.—This township is reached by means of the Battleford and Ribstone creek trail which traverses township 45, range 23, about a mile north of its south boundary. There is also an old wagon trail entering this township near the northeast corner of section 35 and leaving it again near the northwest corner of section 7. This trail, however, is almost indistinct. It evidently is an old trail leading from Poundmaker's Indian reserve to Calgary. The soil is a good rich loam with a variable subsoil of clay and sand. The surface is open and gently rolling prairie in the southeast and eastern parts of the township, but is broken by a small coulee running from near the north boundary and tapering out near the southeast corner of the township. The remaining portion of the township is open rolling prairie broken by small hills and many sloughs, the northwestern part becoming very rough and broken by sloughs and hills up to about 50 feet in height. Hay can be obtained about the sloughs throughout the western part of the township. A small hay meadow of very good quality lies on the southwest quarter of section 3. The water through the township is altogether from sloughs, is plentiful and mostly fresh. The water in the lakes, however, is alkaline. There is no timber in the township, no water-power, no stone quarries, no fuel and no indications of minerals were found. The nearest fuel that could be found was procured from sections 5 and 6, township 43, range 24, and was dried poplar. The supply is not large. The climate is good. The game is wild duck and muskrat. Commencing in the shape of a small ravine in the western half of section 36, a coulee traverses in a winding course sections 25, 26, 23, 24, 13, 12 and runs out in section 1. The banks of this coulee in some places measure 100 feet. A couple of fair sized lakes occur in this coulee, sloughs are also scattered throughout its length and there are some stones and traces of alkali. Section No. 1 is open rolling prairie. An alkaline lake covers the larger portion of the southwest quarter. The east half is more or less broken by sloughs. The northwest quarter is less broken and could be farmed. Section No. 2 is open rolling prairie in the east half, becoming nearly level in the west, with many sloughs and is suitable for farming. Section No. 3 is open rolling prairie in the southwest quarter broken by small hills and sloughs, the remaining portion is nearly level prairie with a good many sloughs, and the whole is suitable for farming. A hay meadow of very good quality occurs on the southwest quarter. Sections 4, 5, 6,

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

7, 8, 9, and the west half of section 10 are open rolling prairie broken by small hills and sloughs and are suitable for ranching. The east half of sections 10 and 11 and the west half of section 12 are open gently rolling prairie suitable for farming. Section 13 and the east half of section 12 are broken by the coulee. Section 14 and the east half of section 15 are open gently rolling prairie suitable for farming. The west half of section 15 and sections 16, 17, 18, 19, 20, 21, 22 and 23 are open rolling prairie broken by hills and sloughs and are suitable for ranching purposes. Section 23 is broken in the northwest quarter by Raspberry lake. The southwest corner of section 24 and the northwest corner of section 25 are broken by coulees. The remaining portions of the west halves of these sections are gently rolling prairie and are suitable for farming. The east halves of these sections and a portion of the southwest quarter of section 36 are rough and broken by a coulee which touches the township at the east. The northeast quarter of section 36 is first class prairie suitable for farming. The west half of this section is broken by the coulee and Yellow Snake lake. Section 26 is rough and broken by ravines and Raspberry and Yellow Snake lakes. The southeast quarter of section 35 is broken by Yellow Snake lake. The southwest quarter is broken by One lake. The north half of this section is open rolling prairie suitable for farming. The east halves of sections 22 and 27 are rough and broken by ravines. The west halves of these sections, together with section 34, are open rolling prairie with some sloughs and are suitable for farming. Sections 28, 29, 30, 31, 32 and 33 are open prairie, rough and broken by sloughs and hills and are suitable for ranching.—*Lennox T. Bray, D.L.S., 1903.*

Township 44.—This township is best reached from the Battleford and Ribstone creek trail, which traverses township No. 45, range 23, about 1 mile north of its south boundary. There is also a wagon trail passing through sections 35, 34, 27 and 21 of this township, which leads from a deserted hut and corral on the southeast quarter of section 21. It evidently joins the Battleford and Ribstone creek trail somewhere in section 2, township 45. The soil of this township is a rich loam underlaid by a sandy clay subsoil. Parts of the sections in the eastern part of the township which are open prairie are suitable for farming. In the western part of the township the surface is open, very rough and broken by hills, lakes and sloughs. A hay meadow and marsh occurs in the southeast part of section 34 and covers the eastern part of sections 27, 22 and 15. This hay is of good quality and in previous years has been cropped. Several good sized lakes lie in this township, but the water in them is stagnant and alkaline. Fresh water, however, is to be found in some of the smaller sloughs. There is no timber in the township, no water-power, no stone quarries and no indication of minerals. The fuel is dried poplar and can be procured from about the centre of township 45, range 23. The climate is very good. Wild ducks and muskrats are found. Section 1 is open gently rolling prairie suitable for farming. The southeast quarter section is broken by several small ravines leading in a northeasterly direction. Section 2 is open gently rolling prairie suitable for farming; the northwest quarter is more rolling and contains small hills and sloughs. Section 3 is open gently rolling prairie in the south half suitable for farming. The north half, however, is more rolling. In section 4 the southeast quarter is open gently rolling prairie and suitable for farming, the remaining part being high rolling prairie suitable for ranching. Sections 5, 6 and 7 are open prairie rough and broken by sloughs and hills up to 50 feet high; these sections are suitable for ranching. Section 8 is open hilly prairie broken in its central part by an alkaline lake and in its eastern part by sloughs. Section 9 is open rolling prairie in its east half and broken by hills and sloughs in its northwest quarter. The southwest quarter is nearly covered by an alkaline lake. Section 10 is open rolling prairie suitable for farming. Sections 11, 12, 13 and 14 are nearly level prairie, with an occasional hill and slough; these are suitable for farming. Section 15 is open, gently rolling prairie suitable for farming. The northeast quarter is nearly covered

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

by a good hay meadow and marsh. Sections 16, 17, 18 and 19 are open prairie, rough and broken by sloughs and hills; they are suitable for ranching. Section 17 is broken in its central southern part by an alkaline lake. Section 20 is broken by alkaline lake which covers the central part and lies in a northwest and southeast direction. Northeast of this lake the surface is gently rolling and suitable for farming. To the southwest of the lake the surface is rough and broken. Section 21 is broken in its southwest quarter by an alkaline lake extending out of section 20. Its southeast quarter is nearly covered by another alkaline lake. The remaining part of the section is open rolling prairie suitable for ranching. A wagon trail leads from a deserted hut and corral situated on the southeast quarter of this section in a northeasterly direction to the north boundary of this township. Section 22 is broken near its southwest part by an alkaline lake extending out of section 21. Its east half is nearly covered by a good hay meadow and marsh. The remaining part of the section is open rolling prairie suitable for ranching. Sections 23, 24, 25 and 26 are open, gently rolling prairie, with an occasional hill and slough, they are suitable for farming. The northwest quarter of 26 is almost covered by a good hay meadow and marsh. The east half of section 27 is nearly covered by a good hay meadow and marsh. Its west half is open rolling prairie suitable for ranching. A wagon trail crosses the section in a northeasterly direction. Section 28 is open, gently rolling prairie in its southwest quarter. Its northwestern part is broken by an alkaline lake, the remaining part of the section being open rolling prairie suitable for ranching. Section 29 is broken in its northeastern part by an alkaline lake extending out of section 28; the remaining part of the section is open rolling prairie suitable for ranching. Sections 30, 31 and 32 are open prairie, rough and broken by hills and sloughs and suitable for ranching purposes. Section 33 is open rolling prairie broken by hills and sloughs. It is broken in its southwest quarter by an alkaline lake extending out of section 28 and its northwest quarter is nearly covered by another alkaline lake. Section 34 is open rolling prairie suitable for ranching. Its southeast quarter is less rolling and suitable for farming. A wagon trail crosses this quarter in a northeasterly direction. Section 35 is open gently rolling prairie in its south half and suitable for farming. The southern portion of this half is covered by a good hay meadow and marsh. The north half is open rolling prairie suitable for ranching. A creek, though of no apparent flow, leads from the hay marsh into section 36 and then back into the northeast quarter of section 35, leaving it at the north boundary of the township. A wagon trail crosses this section running northerly. Section 36 is rolling prairie broken by a few hills with scattered patches of willow scrub; it is suitable for ranching. A creek enters the southwest quarter of this section out of section 35 and leaves it again at the west boundary of the northwest quarter. This creek has no apparent flow.—*Lennox T. Bray, D.L.S., 1903.*

Township 52.—This township was reached by taking the Hudson's Bay Company's old trail from Carlton to Fort Pitt, passing on the south side of Jackfish lake and branching off the Emmaville trail and entering the township in section 13. The trail was dry but the Emmaville branch very rough. The surface of this township is from rolling to hilly prairie dotted with clumps of poplar and willow brush, and bluffs of poplar. Sections 6 and 7 are nearly covered with poplar bluffs and scrub. The bluffs will supply good fuel, fencing and rough building timber. Two large lakes appear, one in sections 23, 24, 25 and 26. A large creek from the north runs into this lake in the northeast quarter of section 26 and runs out at the southeast end of the lake. The second lake lies in sections 32 and 33 and has no outlet. Both lakes have been traversed. A large slough or hay marsh runs through sections 10, 16, 20, 29 and 30. A small creek runs westward out of this marsh. Numerous sloughs are found all over the township and in ordinary dry seasons from 300 to 600 tons of hay could be cut in the township, mostly along the creek in sections 26, 35 and 36, and around the slough in the centre of the township. In wet seasons this quantity could not be cut. The soil is a

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 23.

fair sandy loam, mostly sand subsoil, well suited for grazing purposes, but not fit for farming. The water is fresh in all the lakes, creeks and sloughs. No timber for lumbering purposes. No minerals or stone quarries are found in the township. The climate was wet and cold with frequent frosts in the latter part of August. Ducks and prairie chickens are plentiful; no deer. A bear was seen on Bear hill in the southwest part of this township. A surveyed trail from Battleford to Onion lake enters the township in the southwest quarter of section 3 and leaves it in the southwest quarter of section 30. The mail trail from Emmaville to Onion lake runs diagonally northwesterly through the northeast quarter of the township, entering the township in section 13 and leaving it in section 33. One rancher has squatted on section 26.—*Wm. R. Reilly, D.L.S., 1903.*

Township 53.—This township is from rolling to hilly, thickly dotted with bluffs of poplar from 3 to 8 inches in diameter, willow and poplar scrub. The heaviest bluffs are found in the northeast corner of the township, but otherwise are pretty evenly scattered all over the township. Bluffs will supply good fuel, fencing and timber, for rough log buildings. This township is very much cut up by creeks, lakes and sloughs. Five lakes were traversed. One on the east boundary in sections 1 and 12. One on the south boundary in sections 4 and 5. One on the west boundary in sections 7 and 18. One on the southeast quarter of section 18, and one in sections 27 and 28. A large creek enters the township at the north in the northeast quarter of section 36 and flows nearly south, leaving the township in section 2 and flows into a large lake in the township to the south. Another large creek enters the township in the northwest quarter of section 33 and flows nearly south into the lake in sections 27 and 28, then southwesterly to the lake on the west boundary in section 18. The land is very flat along the creeks and on the west side of the lake in section 28 and around the lake in section 18. In favourable seasons a great quantity of hay can be cut all along the creeks and around the lakes mentioned. Many sloughs are found in the south half of the township, some of them good hay producers, especially in sections 9 and 10. I would estimate that from 1,000 to 1,500 tons of hay could be cut in this township. The water in all the creeks, lakes and sloughs is fresh. The soil is a black sand loam from 2 to 6 inches deep overlying a clay subsoil on the east side of the township and runs into a sandy subsoil to the west. Classed 2, 3 and 4. This township is an ideal one for stock raising purposes, abundance of grass, hay, water, fuel, fencing and rough building material, but it is not adapted for farming. No minerals, no stone quarries and no timber for lumbering purposes are found. The mail trail from Emmaville to Onion lake runs northwesterly through sections 4, 5, 8 and 7. An old trail runs easterly through sections 17, 21, 22, 27, 26 and 25, with a branch from section 27 running nearly north. Ducks and prairie chickens are plentiful. Some jumping deer were seen on the north of the township, but no other noticeable game. Climate, wet and cold, sunshine and showers alternately; some frosts. One rancher is squatted on section 18.—*W. R. Reilly, D.L.S., 1903.*

Range 24.

Township 35.—At present the best way of reaching this township is by the old military trail from Battleford to Swift Current. The soil which is a rich clay is eminently adapted for wheat raising. The whole township is rolling prairie, no timber of any kind. There is good hay around most of the sloughs. A water course runs through this township, but evidently it only flows in the spring of the year. Its water is evidently fresh. No water-power is available. We had frost every night after September 1. There is no fuel, exposed rock or minerals. There are a few ducks but mighty hard to shoot.—*H. B. Proudfoot, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 24.

Township 36.—The most convenient method of reaching this township is via the trail running southwest from Battleford and passing the northerly end of Tramping lake, a branch of which passes westerly through this township. The soil is clay and eminently adapted to grain growing. The surface is open rolling prairie, no timber whatever. The water in the sloughs, &c., is generally good; very little alkaline water was found. Good hay can be cut around all the sloughs. This year (1903) the sloughs were nearly all dry and afforded a good chance for hay making. There was no running water. The survey of the township was made in the latter end of September, the days were fine and warm, but there was frost every night. No fuel of any kind nearer than Tramping lake in range 20 and that was very limited. There are no minerals or exposed rock. A few ducks and antelope were seen.—*H. B. Proudfoot, D.L.S., 1903.*

Township 37.—The township is reached from Battleford going southwesterly on the trail passing the Ear hills, thence westerly to the township. The soil is a rich clay good for grain-growing. The surface is generally high rolling prairie with a few ravines towards the north end of the township. There is no timber in the township. There is a large hay marsh on sections 5 and 6, and hay may be cut to advantage around all sloughs. There is supposed to be a water course through the township, but at the time of survey no water was running. The water in the sloughs, &c., is generally fresh. During time of survey (September) we had warm days but frost every night. There is no fuel. We drew our wood from Tramping lake. There are no minerals and no exposed rock. A few antelope were seen. Ducks, chicken and geese were scarce.—*H. B. Proudfoot, D.L.S., 1903.*

Township 38.—This township is most easily reached by the Battleford-Sounding lake trail, which passes about eight miles north of the north boundary. The surface is all rolling prairie, no timber whatever being met with. The soil, generally clay loam with a rich clay subsoil, is eminently adapted for grain-growing. No hay marshes, minerals, quarries or water-powers were in evidence. Antelope and ducks are numerous but chickens are scarce. Water in ponds and sloughs is fresh.—*H. B. Proudfoot, D.L.S., 1903.*

Township 40.—The Sounding lake trail from Battleford enters this township at the southeast corner of section 25 and leaves it near the southwest corner of section 5. The latter part of the trail is indistinct and but little used. The greater part of the township is a clay loam, suitable for grazing, and where not too hilly, suitable also for farming. Sections 35 and 36, however, are sandy and not suitable for either. A valley about 250 feet deep runs from section 25 southwesterly to Edward lake on the western boundary of the township in section 7. This valley is about a mile in width; its bottom and hillsides are for a great part boggy and unfit for farming. An arm of this valley of about the same width runs northerly from near the centre of the township and takes in the greater part of sections 27, 28, 33 and 34 and dies away in township 41. The most of sections 29, 30, 31 and 32 are prairie and good farming. All south of the valley is an undulating prairie good for either farming or grazing. The sandy parts of the township and the hillsides are pretty well covered with small poplar and scrub; there is no large timber. There is no hay growing in the township. The high parts of the township are fairly well watered with numerous fresh ponds and sloughs, which, however, are not permanent. The lakes are all strongly alkaline. There are two good springs emptying into Fire lake from the hills in sections 8 and 9, and there is also a good spring enters Fox lake from near the centre of section 4, township 41. There are no water-powers. The general indications are that the season is somewhat late in opening. There was a heavy snowstorm on May 22 and a frost early in June. There was no other frost until the first week of September. The only fuel is poplar wood, which can be conveniently gotten except in the south and southeast parts of the township. There are no outcroppings of rock and no minerals. Ducks, geese and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 24.

prairie chickens were common; foxes, wolves and red deer were also seen.—*Herbert J. Bowman, D.L.S., 1903.*

Township 41.—The route to the township is along the Sounding lake trail from Battleford as far as township 40, range 23; the trail is very little used. Almost the entire township is a succession of sand hills interspersed with numerous ponds and lakes, some of which are of considerable size. Parts of sections 5, 6, 7 and 8 are, however, of a clay loam and suitable for grazing, and the greater part of sections 25 and 36 lying in the valley at the south end of Seagram lake is very fertile and well suited for farming. Bluffs of poplar are found on the sand hills and hillsides all over the township, but it is chiefly scrubby and seldom reaches a greater diameter than 6 inches. There is a good supply for fuel but no building timber. Parts of sections 24, 25 and 36 produce hay of fair quality but not in large quantities. Very little hay is to be had in any other part of the township. Small fresh water ponds are common in all parts of the township, but the larger ones and all the lakes are strongly alkaline. A good permanent spring runs southerly from near the centre of section 4, and a small creek of fresh water enters Seagram lake from the east in section 36. Throughout the water supply is sufficient and permanent. The land for a short distance from the east end of Seagram lake and those nearer Henry lake and Ahrens lake are likely to be flooded to a depth of about 6 inches, until the latter part of May. There are no water-powers. The general indications are that the season is somewhat late in opening. There was a heavy snowstorm on May 22, and a heavy frost early in June, but no other frost until the first week in September. The only fuel is poplar wood which may be obtained readily in almost any part of the township. In a few places in sections 2, 3, 4, 9 and 10 it is dry, being fire-killed. There are no outcroppings of rock in the township and no minerals. Large numbers of ducks are to be had on all the ponds and lakes. Prairie chickens, curlew, snipe and plover are also plentiful. This township lies in an immense valley sometimes known as the 'round valley,' and stretching northwesterly towards Manito lake. The bottom of the coulee is over 200 feet below the level of the prairie to the east. The easterly boundary of the township runs for some distance on the side hill, namely along the east boundaries of sections 24 and 25.—*Herbert J. Bowman, D.L.S., 1903.*

Township 42.—The route to the township from Battleford is along the Sounding lake trail which is quite distinct as far as township 42, range 21, west of the third meridian. From here a course due west over the prairie may be taken. That part of the township south of Seagram lake is quite similar to township 41, range 24, being almost entirely sandhills with considerable brush and scrub, but no large timber. The northern part is a clay loam and except in the neighbourhood of Seagram and McLean lakes, where it is very hilly, the land is a heavily rolling prairie fairly well suited for farming and grazing, though in some places rather too stony. In sections 3, 4, 5, 7, 8 and 9 there are small bluffs of poplar trees suitable for fuel only. In section 6 at the end of Clare lake there is some poplar and balm of Gilead, suitable for small building timber. Small building timber can also be had in the ravines and on the hillsides reaching back from Seagram and McLean lakes in sections 13, 14, 15, 16, 17 and 18. There are also small bluffs of scrubby trees throughout the northwest portion of the township. There are no flats or marshes of any account producing hay. In the northern part of the township there are numerous sloughs and ponds of fresh water. Many of them are quite large and probably permanent, but the smaller ones dry up. In the hills which run across the township from east to west about the centre, there are a number of springs of excellent water. A creek whose flow depends much upon the weather runs from Clare lake, which is fresh, into Seagram lake at its westerly end. That part of Seagram lake lying west of the central line of the township is very saline, while the rest of it and McLean lake are alkaline. There is no part of the township likely to be flooded. There are no water-powers. The general indications are

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 24.

that the season is somewhat late in opening. There was a heavy snowstorm on May 22 and a frost early in June. There was no other frost until the first week in September. The only fuel is poplar and balm of Gilead. Except in the northeast quarter of the township sufficient quantities can be obtained conveniently. There is no sign of rock in place, but in the northern part of the township there is an unlimited supply of granite boulders for building purposes. There are no minerals, though the action of the magnetic needle in section 16 near Seagram lake indicated iron. There are large numbers of duck on the ponds and lakes; prairie chickens are also numerous. In the northern part foxes, wolves, antelope and red deer were seen.—*Herbert J. Bowman, D.L.S., 1903.*

Township 43.—This township is best reached by the Battleford and Ribstone creek trail, which crosses the southern tier of sections in township 45, range 24. There is also a trail though rather indistinct, crossing in a southwesterly direction section No. 1, which the Indians say leads from Poundmaker's reserve to Calgary. The soil of this township is a good rich loam, with a clay and sand subsoil, but owing to the broken and uneven surface, it is unsuitable for farming; it, however, would be suitable for ranching purposes. The surface is broken by hills from twenty to fifty feet high and numerous small sloughs. Some poplar and willow scrub occurs on the western tier of sections, also on sections 4, 5, 8 and 9. The remaining parts of the township are open prairie. There is no timber except a few small bluffs of poplar measuring below 6 inches in diameter, situated on sections 5 and 6. Good hay is found in the southwest quarter of section 14 and the northwest quarter of section 11, it also occurs on the west half of section 2 and the east half of section 3 and on the northeast quarter of section 24 and the southwest quarter of section 25. The only fuel in this township is dried poplar procured off sections 5 and 6, and only a few are to be found. The water in the township which is from sloughs is fresh and plentiful. There are no water-powers in this township and no stone quarries and no indications of minerals were found. The climate is good. Wild ducks are very plentiful. Section No. 1 is gently rolling prairie and suitable for farming. An Indian trail leading from Poundmaker's reserve to Calgary crosses this section and section No. 2 in a southwesterly direction. The south halves of sections Nos 2 and 3 are gently rolling prairie and suitable for farming. The remaining parts of the township, although fairly good soil, are too rough and broken to be farmed.—*Lennox T. Bray, D.L.S., 1903.*

Township 44.—This township is reached from the Battleford and Ribstone creek trail which crosses the northwest quarter of section 31 and traverses in an easterly and westerly direction township No. 45 in range 24, about half a mile north of the north boundary of township No. 44 in range 24; this trail is in good condition. The soil of this township is very good, being a deep rich loam underlaid by a good clay subsoil, but owing to the many small hills and sloughs it is unsuitable for farming. It, however, would be suitable for grazing and ranching purposes. The surface is very uneven and broken by hills and numerous small sloughs. The northwestern part is covered by patches of poplar and willow scrub. Poplar trees up to 8 inches in diameter can be found in different parts of sections 28, 29, 32 and 33, the quantity, however, is small. A large hay meadow and marsh covers most of the southwest quarter of section 25 and the northwest quarter of section 24. The hay is of good quality. Some hay is also found on the northwest quarter of section 7 and southwest quarter of section 18. The water throughout this township which is from sloughs is fresh. The supply is more than sufficient, but as to permanency it is hard to say. These sloughs are mostly of a peculiar character, they may have only a small surface area, but some have a depth of 10 feet. The fuel is dried poplar and can be procured from sections 20, 21, 28, 29, 32 and 33. No water-powers occur in this township, no stone quarries and no indications of minerals. Wild duck and muskrat are quite plentiful. The

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 24.

climate is very good. Sections Nos. 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32 and 33 are covered with patches of willow scrub and are rough and broken by hills and numerous sloughs. The southwest quarter of section 25 and the northwest quarter of section 24 are nearly level and covered by a good hay meadow and marsh. The remaining parts of this township are more or less open prairie, broken by hills and numerous sloughs.—*Lennox T. Bray, D.L.S., 1903.*

Township 45.—This township is reached by a wagon trail which leads from Battleford to Ribstone creek, intersecting the township on the easterly boundary of section No. 1. It traverses the township in a westerly direction, leaving it again at the southerly boundary of section 6. This trail is in good condition. The soil of the township is on the whole very good, being a rich loam underlaid in most cases by a good clay subsoil, but owing to the unevenness of the surface only a few of the sections are suitable for farming as described below. No extent of timber is found in this township. There are a few small bluffs of poplar measuring 3 to 6 inches in diameter located in the south half of section No. 31. There are also some poplar trees measuring from 3 to 9 inches in diameter located in the ravines running through sections 27 and 33 to the coulee. No hay exists except a small quantity which is situated near the eastern boundary of section 25. The water in this township, which is chiefly from sloughs, is both fresh and alkaline, the fresh water existing in the sloughs which are in the higher parts of the township and the alkaline water in the sloughs in the coulee. A small fresh water spring creek passes through sections 33 and 34, another passes through sections 24 and 25. The climate is very good. The fuel is dried poplar procured from the ravines leading to the coulee. There are no water-powers, no stone quarries and no indications of minerals. Wild ducks and muskrats are found. This township is very rough and broken by numerous hills and sloughs in its southern and eastern parts, and by a coulee and ravines leading to it from the centre to the northeastern corner. The land in this coulee, however, gradually rises towards the northern boundary and becomes very good and is suitable for farming. Section No. 1 is traversed in an easterly and westerly direction by the Battleford and Ribstone trail. This section is much broken by numerous hills from 20 to 60 feet high and numerous small sloughs with scattered patches of willow scrub, and is suitable for grazing purposes. Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 are all similar to section 1. Sections 13, 14, 15 and 16 are broken by numerous hills and sloughs and a coulee with ravines leading to it. These sections have scattered patches of willow scrub and are suitable for grazing purposes. Sections 17 and 18 are rolling prairie with scattered patches of poplar and willow scrub and a few stony ridges. Portions of these sections are suitable for farming. Sections 19 and 20 are open, gently rolling prairie, with a few stony ridges and are suitable for farming. Section 21 is similar to section 19, but is broken and rough in southerly and easterly portions by a coulee and ravines. Section 22 is broken to the west by ravines running to the coulee and they contain poplar 3 to 9 inches in diameter. This section is in the flat of the coulee and portions of it are wet and marshy. Some alkali is found in the lower parts. Section 23 is also in the flat of the coulee. It is open, rolling prairie, with some portions wet and marshy; some alkali is found in the lower parts. Section 24 is broken in its southeasterly portion by hills and ravines running to the coulee. The remaining part being in flat of coulee, alkali is found in the sloughs and lower parts. A fresh water spring creek runs northerly from this section into section 25. Sections 25, 26, 35 and 36 are open rolling prairie suitable for farming. A little hay exists in section 25 near the east boundary. A fresh water spring creek flows into this section from section 24 and thence in a northeasterly direction towards Battle river. Sections 27 and 34 are open rolling prairie in their eastern halves and suitable for farming, while in their western halves they are rough and broken by ravines which contain poplar from 3 to 9 inches in diameter. A fresh water spring creek flows into section 39 from section 33 and thence

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 24.

in a northeasterly direction towards Battle river. Section 28 is broken in its east half by ravines containing poplar from 3 to 9 inches in diameter. In its west half it is open rolling prairie and suitable for farming. Sections 29 and 30 are open rolling prairie containing some stony ridges in their south halves. To the north they become more rolling, with patches of willow scrub and are suitable for farming. Sections 31 and 32 are rolling prairie, with willow scrub in south halves, becoming less rolling to the north, with patches of willow and poplar scrub. These are suitable for farming. A few small bluffs of poplar occur in the south half of section 31.—*Lennox T. Bray, D.L.S., 1903.*

Township 52.—The sections on the north and west side of this township are rough, broken and hilly; the rest of the township rolling. The face of Bear hill cuts across sections 33, 34, 35, 36 and 25. The ground gradually rises from the lake and creek on the north to a height of 300 feet. The face of the hill is thickly covered with poplar from four to eight inches in diameter with heavy underbrush. About 60 per cent of the township is covered with poplar bluffs and scrub with openings of prairie. The west side of the township is more open than the east. A few clumps of spruce 6 to 12 inches in diameter grow along the creek in sections 32 and 33. The timber in the bluffs in this township is not any larger (6 to 8 or 10 inches in diameter) than in the townships on the east and north of it, but the bluffs are much larger and thicker. The largest bluffs are in sections 22, 23, 26 and 27. The bluffs will furnish immense quantities of fuel, fencing and rough building material. The soil is a rich black loam, 4 to 6 inches deep with mostly clay subsoil, classes second, third and fourth, and with the exception of the sections on the north and west sides of the township, is very good for farming purposes. The clearing of the land would not involve a great deal of labour. There are a number of sections in the interior of the township with scarcely a foot of waste land in them. A large slough in sections 9 and 10 and one in the northeast corner of section 11 will in drier seasons than this furnish a great quantity of hay. A number of small sloughs are found in the township that will furnish hay. Red Deer river flows southward through sections 31 and 30, and Little Red Deer westward through the north part of sections 33, 32 and 31. A large lake on the north side of sections 34 and 35 has been traversed. The Saskatchewan enters the township in the southwest quarter of section 18, curves southward through the west half of section 7 and out of the township, cutting the northwest corner of section 6. The water in the sloughs, lakes and creeks is fresh. The trail from Battleford to Onion lake enters the township in the southeast quarter of section 25, runs northwesterly through sections 25, 36, 35 and 34, leaving the township just west of the quarter post on the north boundary of section 34. There are no minerals or stone quarries and no timber for lumbering purposes. October was a very fine month, very little rain, bright warm days and not much frost for the season. Prairie chickens and rabbits were very plentiful, frequent tracks of bear, a few jumping deer and a couple of elk were seen along the river.—*Wm. R. Reilly, D.L.S., 1903.*

Township 53.—(East outline.)—The land on each side of the east boundary is open and rolling with numerous small sloughs and ponds. Towards the north it is more rolling and even hilly with beautiful slopes of prairie. There are a few clumps of poplar, some of which is sufficient for building and a fairly good supply of fuel. On sections 13 and 15 is a nice lake, evidently deep, with a large marsh extending to the northwest, and also another to the east of it. The soil is generally deep black loam, with light sandy subsoil, and three creeks running through this township in a southwesterly direction, supply plenty of fresh water.—*J. J. Dalton, D.T.S., 1903.*

(Subdivision.)—This township is rough, broken and hilly; the north half pretty well covered with bluffs of poplar, willow and poplar scrub, with a few spruce trees along the creek in sections 33 and 34, the south half thickly dotted with poplar bluffs and scrub covering about one-fourth of the surface, the remainder open prairie. The

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 24.

bluffs will supply timber for fuel, fencing and logs 6 to 8 inches in diameter for rough buildings. The soil of the south part of the township is a light sandy loam with sand subsoil, the north part a good black loam four to six inches deep, with sand and clay subsoil. It is fair pasture land in the south and good in the north, but not suited for cultivation. Three lakes were traversed, one in sections 15 and 16, one on the east boundary sections 12 and 13, and one on the south boundary in sections 2 and 3. The stream flowing westward out of this lake is known as Little Red-deer, it passes through a slough and out of the township in the southeast quarter of section 4, re-entering the township and joining the Red-deer in the southeast quarter of section 6. Red-deer river enters the township in the northwest quarter of section 34 and flows southward through sections 34, 33, 28, 21, 20, 17, 8, 7 and 6. This is a rapid stream from 25 to 40 feet wide, 2 to 4 feet deep. By building dams it could be used several times as a water-power in the south part of the township. The valley is too wide in the north part to make use of the power, with outlay in proportion to its value. A small creek rises in a marsh in sections 24 and 25, runs westward to the lake in sections 15 and 16 and out of the west end of this lake, joining Red-deer river in the south part of section 17. A large creek 15 feet wide, 2 feet deep, with strong current, flows out of the lake on the east boundary southward through section 12 and into a large slough in section 1 and through the slough into the lake in sections 2 and 3. Several small lakes and sloughs are scattered all over the township. The water is fresh in all creeks, lakes and sloughs. Hay is not as plentiful as in the township to the east of this one; from 200 to 300 tons could be cut in most seasons, the greatest quantity in sections 13 and 14 and in 1, 2 and 3. Minerals, none. Stone quarries, none. Timber for lumbering purposes, none. The trail from Battleford to Onion lake enters the township just west of the quarter post on the south boundary of section 3, crosses the Little Red-deer at this point by a bridge, runs northwest through sections 3, 4, 9, 8, 7 and 18, crossing the Red-deer by a bridge in the northeast quarter of section 18. The mail trail from Emmaville to Onion lake enters the township, crossing the creek in the northeast quarter of section 12 and runs westward through sections 12, 11, 10 and 9, joining the Battleford and Onion lake trail on the east boundary of section 8. First part of September was wet and cold, latter part bright and fine. October bright and warm with frosty nights. Prairie chickens and rabbits are plentiful, some jumping-deer in the north of the township. One rancher is squatted on section 15.—*Wm. R. Reilly, D.L.S., 1903.*

Township 54.—(East and west outlines.)—This township is not so favourably conditioned as the township to the south. It is rolling and open to the south and in the north is rough and scrubby with bluffs of poplar. Muskegs and sloughs are numerous. The soil, black loam or leaf mould, is very shallow, not averaging more than about 2 or 3 inches. There are numerous bluffs of poplar that would answer for building purposes, though more or less stunted. There is a stream 50 links wide and 4 feet deep running south through the centre of the township.—*J. J. Dalton, D.T.S., 1903.*

Range 25.

Township 40.—The route to the township is along the Sounding lake trail as far as township 40, range 24, west third meridian, thence westerly. The latter part of the trail is little used, and indistinct. The soil is a clay loam suitable for grazing, and where not too hilly is also fair farming land. The easterly and southerly tiers of sections, also sections 26 and 35, are rolling prairie, and are fair farming land. The greater part of the remainder is too hilly, except occasional small plateaus and valleys. No part of the surface is scrubby, but there are a few large bluffs of small poplar in sections 9, 21 and 29, and some small bluffs in the other parts of the township. There are a few small hay marshes in sections 1, 2, 3, 4, 11, 12, 13 and 14. The quantity is

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 25.

not great at any place, and the quality is only fair. There are ponds and sloughs all over the township, ranging in size up to small lakes. Many of the smaller ones are fresh, but the larger ones and all the lakes are alkaline. A small creek of good water starts in section 21 and runs into Chisholm lake in section 4. The water supply is sufficient and permanent. None of the lands are likely to be flooded. There are no water-powers. The general indications are that the season is somewhat late in opening. There was a heavy snowstorm on May 22 and a frost early in June. There was no other frost until the first week of September. There is a limited supply of poplar wood, which is the only fuel. There are no outcroppings of rock and no minerals in the township. Ducks, geese and prairie chickens were common all over the township. Foxes, wolves and red deer were also seen.—*Herbert J. Bowman, D.L.S., 1903.*

Township 41.—The route to this township from Battleford is along the Sounding lake trail as far as the south boundary of township 41, range 23, west third meridian, thence in a northwesterly direction across township 41, range 24. The northeasterly part of the township is sandy, hilly, and much broken by sloughs and lakes. The northwesterly part is less broken, although the soil is light. The remainder of the township has better soil, and except that for the most part it is very hilly and broken by large sloughs, would be fairly good farming and grazing land. Sections 7 and 18 and parts of 8 and 17 are fairly good farming land. In the localities of the lakes there is a good deal of scrub. There are numerous large bluffs of small poplar scattered over the whole township. This gives an abundant supply of fuel, but none of it is large enough for building purposes. In sections 4, 5, 7, 8, 9, 16, 17 and 18 there are numerous sloughs on which hay may be cut. At no place is the quantity large, and the quality is generally fair. Some of the ponds are fresh, as are also the larger lakes, except Davey lake. A good spring enters Cherry lake in section 35 from the northwest. There are no water-powers. The general indications are that the season is somewhat late in opening. There was a heavy snowstorm on May 22 and a frost early in June. There was no other frost until the first week in September. The only fuel is poplar wood, which can be conveniently obtained at any part of the township in sufficient quantities. There are no outcroppings of rock, and no minerals. On many of the hills, however, there are granite boulders in large quantities. There are large numbers of ducks, geese and prairie chickens throughout the township. Wolves and red deer were also seen. The remains of a hunter's lodge was found a short distance south of Chimney lake.—*Herbert J. Bowman, D.L.S., 1903.*

Township 42.—The route to the township from Battleford is along the Sounding lake trail, which is quite distinct, as far as township 42, range 21, whence a route due west may be taken. The greater part of the township is a succession of sand hills interspersed with ponds and small lakes. The northeasterly part is a little better soil, but it is so broken by hills and deep sloughs as to render it unsuitable for farming. However, part of section 35 is a flat valley of good land, as are also parts of sections 5 and 6. Small bluffs of scrub are found all over the township. Poplar for fuel can be got readily in any part of the township, but it rarely reaches a greater diameter than 4 inches. However, in section 1 near Clare lake, and in sections 7 and 18 along Manito lake, considerable quantities of poplar and balm of Gilead 12 to 15 inches in diameter suitable for building purposes can be had. There is hay in small quantities in sections 13 and 24, near Orion and Altair lakes. The quality is fair. Very little grows in any other part of the township. There are numerous ponds and lakes all over the township, and fully 50 per cent of these are fresh water. A creek whose flow depends much upon the weather runs through section 12 from Clare lake which is fresh, to Seagram lake in the township east. There is a spring of excellent water in section 25, and also one at the southeasterly corner of section 3. Both these are permanent. The permanent water supply is abundant. There is no water-power. The general indications are that the season is somewhat late in opening. There was a heavy snow-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 25.

storm May 22 and a frost early in June. There was no other frost until the first week in September. The only fuel is poplar and balm of Gilead, and a good supply of this can be had anywhere in the township. There are no outcroppings of rock and no minerals. Ducks, geese, prairie chickens and sandhill cranes were numerous.—A number of wolves and red deer were also seen.—*Herbert J. Bowman, D.L.S., 1903.*

Township 43.—This township is reached from the Battleford and Ribstone creek trail, which passes through township 44, range 25, about four and a quarter miles north of the north boundary of this township. The trail is in good condition. The soil is first class, in the northern central part being a deep rich loam underlaid by a good clay subsoil. The southern two tiers and western tier of sections have very poor soil, being chiefly sand and gravel. The western tier and the southern two tiers of sections and the eastern tier of quarter sections of this township are very rough and hilly; they are suitable for pasture land. The remaining part of the township is suitable for farming. The surface varies from level prairie in the central northern part to very rough and broken in the southern and western parts. The central northern part is thickly dotted with bluffs of poplar measuring to 6 inches in diameter and heavy willow scrub. The remaining part of the township is more or less covered with patches of scrub, as will be described below. Poplar timber measuring in some places 8 inches in diameter was found standing in bluffs scattered throughout the western four tiers of sections. Hay of a fair quality occurs to a small extent on sections 24 and 25, and also in the northern parts of sections 4 and 5. Fresh water is scarce throughout this township, the supply being from a few small sloughs. A fresh water creek flows southwesterly through section 31 towards Manito lake. The lakes in sections 1, 2, 4 and 5 are alkaline. The fuel is dried poplar procured from nearly any one of the western four tiers of sections. The climate is good. The game is mostly prairie chicken and wild duck. There are no water powers in this township, no stone quarries and no indications of minerals. This township is divided by a ravine or coulee which, starting from the western boundary of section No. 19, crosses the township in a southeasterly direction leaving it again near the southeast corner. The land to the north of this coulee is very good and nearly level. To the south of it, however, the country is rough and broken by sand hills and lakes. Section 1 is rolling prairie broken to the northeast by hills and to the west and south by a coulee which contains alkali. The north and southwest quarter sections are partly covered by a lake which contains alkaline water. Sections 2 and 3 are rough and broken by hills to the south and a coulee to the north. Sections 4 and 5 are broken by sand hills and ridges, each has a large lake covering in an east and west direction nearly the width of the sections. Between these two lakes and to the north a hay meadow exists. These lakes contain alkaline water. Some poplar stands on the northwest quarter of section 5 measuring up to 8 inches in diameter. Section 6 and the south half of 7 are rough and broken by sand hills and alkaline sloughs. Thick patches of cherry and poplar scrub grow on the northern slope of these hills. The northwest half of section 7 and the northwest quarter of 8 are gently rolling prairie. The soil is sandy loam. Patches of willow and poplar scrub occur throughout these sections. Sections 8, 9 and 10 are high rolling prairie with gravel and stony ridges and are broken by a coulee crossing in a northwesterly direction. The north half of sections 10 and 11 and the northwest quarter of 12 are gently rolling prairie and suitable for farming. The south half of section 11 and the remainder of 12 are rough and hilly. Some poplar up to 6 inches in diameter occurs on the south half of section 11. The east halves of sections 13 and 24 are broken by small hills with stony ridges. The west halves of sections 12 and 24 and sections 14 and 23 are open and nearly level prairie suitable for farming. Section 15 and the north half of section 16 are gently rolling prairie with thick patches of willow scrub. Some few bluffs of poplar under 6 inches in diameter occur on section 16. The south half of sections 16 and 17 are broken by a coulee. Section

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 25.

18 is gently rolling prairie with bluffs of poplar and willow scrub. It is broken to the northeast by the coulee. Sections 19 and 30 are rough and broken by a coulee and ravines. Poplar and willow scrub occur throughout. Sections Nos. 20, 21, 22, 27, 28, 29, 32, 33 and 34 are nearly level prairie and are covered by thick bluffs of willow and poplar measuring up to 6 inches in diameter. These sections are suitable for farming. Sections 25, 26, 35 and 36 are open gently rolling prairie and suitable for farming. Quite a number of sloughs occur in the eastern parts of sections 25 and 36. Section No. 31 is broken by a deep ravine containing a fresh water creek and by Manito lake. Poplar up to 10 inches in diameter was found in some of the ravines running to the lake.—*Lennox T. Bray, D.L.S., 1903.*

Township 44.—This township is reached by the Battleford and Ribstone creek trail, which traverses it in an easterly and westerly direction, and is in good condition. The soil is fair, being a rich loam underlaid in most cases by a clay subsoil. The southern and western parts of this township are suitable for farming, but the northern and eastern parts are rough and hilly, and more suitable for pasture. The surface varies from nearly level in the southern part to rough and rolling in the northeastern part. Willow scrub is found scattered in patches throughout the township, the heaviest being near the southern central part. Some few bluffs of poplar occur in sections 4, 5, 8, 9, 16 and 17; the timber, however, is small, being below 6 inches in diameter. Poplar timber also occurs in the ravines running to Manito lake, measuring in some cases up to 10 inches in diameter. A small hay meadow occurs in the northern part of section 9. Some hay is also found in sections 20, 21 and 22 in and about the sloughs. The water, which is mostly from sloughs, is fresh. A small fresh water spring creek flows out of section 5 through the southeasterly part of section 6 towards Manito lake. Apparently the east half of section 20 and the west half of section 21 become flooded to a depth of from 1 to 3 feet. There are no water-powers in this township, no stone quarries and no indications of minerals. The climate is good. The game found is mostly wild duck. The fuel is dried poplar procured from the central southern part of the township. Section 1 is rough and hilly in the east and becomes nearly level prairie in the west part. Section 12 and the east half of section 11 are rough and hilly towards the north and east, becoming gently rolling towards the south and west. Sections 2, 3, 4, 5, 8, 9, 10 and west half of 11 vary from nearly level to gently rolling prairie, and are suitable for farming. Sloughs and willow scrub occur scattered in different parts of these sections. A hay meadow occurs in the northern part of section 9. Poplar below 6 inches in diameter grows in scattered bluffs in sections 4, 6, 8 and 9. Sections 6 and 7 are gently rolling prairie, with some sloughs and willow and poplar scrub scattered throughout. To the west they become more rolling, and section 7 is broken by Manito lake and ravines running to the lake. Poplar trees are growing in some of these ravines, and along the shores of the lake, measuring in some cases up to 10 inches in diameter. A fresh water creek flows out of section 5 through the southeast half of section 6. Section 18 is broken in the southwesterly part by Manito lake and ravines running to it. The eastern and northern parts are rolling prairie and suitable for farming. Sections 15, 16 and 17 are gently rolling prairie, with some sloughs, and are suitable for farming. Bluffs of willow and poplar are scattered throughout these sections. Sections 13, 14, 22, 23, 24, 25, 26, 27, 36, 35, 34 and east halves of 32 and 28 are rough and broken by hills and sloughs. Willow scrub in patches is scattered throughout them, mostly on the northern slopes of the hills. These sections are suitable for pasturing purposes. Sections 19, 20 and 21 are gently rolling prairie, suitable for farming. A large slough covers nearly all the northwest quarter of section 20. A series of sloughs and flats occur in the northeast quarter of 20 and the northwest quarter of 21. Some hay grows on these flats. The west halves of sections 28 and 32 and sections 29, 30 and 31 are gently rolling prairie, with a great many sloughs and patches of willow and poplar scrub. A large slough is situated on the

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 25.

northeast quarter of section 31. These sections are suitable for farming. The Battleford and Ribstone creek trail intersects section 36 near the northeast corner and crosses sections 36, 35, 26 and 27 in a southwesterly direction. It touches section 21 and then crosses sections 28, 29 and 30 in a westerly direction. This is a wagon trail and is in good condition.—*Lennox T. Bray, D.L.S., 1903.*

Township 45.—This township is best reached from the Battleford and Ribstone creek trail, which traverses township No. 44, range 25, at about $1\frac{3}{4}$ miles south of its north boundary. This trail is in good condition. The soil of this township is very good, being a rich loam underlaid by a good clay subsoil, but owing to the roughness of the surface and the great number of sloughs only a very few of the sections are suitable for farming purposes. The surface is very rough and broken by numerous small hills and sloughs. The northeast part, however, is less broken and changes to gentle rolling prairie as it reaches the north and east boundaries. The water which is from sloughs is chiefly alkaline, although some fresh water sloughs are found as well. The water in Flat and Tent lakes is quite alkaline. The fuel is dried poplar, which is scattered throughout the central part of the township, though not very abundantly. There is no hay in the township, no water-power, no stone quarries and no indication of minerals. The climate is very good. Wild ducks and muskrats are found, the latter are very plentiful. There is very little timber in the township, with the exception of a few bluffs of poplar measuring up to 6 inches in diameter, which are located in the northern parts of sections 20 and 21. Section No. 1 is prairie, broken by small hills and a few sloughs. Sections 2, 3, 4, 5, 6 and 7 are hilly, open prairie, with many sloughs and scattered patches of willow scrub. Sections 8, 9 and 10 are open prairie, broken by small hills and many sloughs. Sections 11 and 12 are open, hilly prairie, with a few sloughs. Section 13 is gently rolling prairie, the northwest quarter of the section being broken by Flat lake, the water of which is alkaline. Some alkali occurs on the lower parts of this section. In section 14 the east half is gently rolling prairie, the west half rough and hilly. Section 15 is hilly prairie, with many sloughs and scattered patches of willow scrub. Section 16 is open, hilly prairie, with many sloughs. Sections 17, 18 and 19 are prairie, broken by small hills and many sloughs. In section 20 the northeast quarter is nearly all covered by Tent lake. Section 21 is nearly all covered by Tent lake, the water of which is alkaline. A few bluffs of poplar trees up to 6 inches in diameter stand on a peninsula in the northern parts of this section and section No. 20. Section 22 is rolling prairie, broken by small hills and many sloughs. Sections 23, 24, 25 and 26 are gently rolling prairie, with a few patches of willow scrub and a few sloughs. These sections are suitable for farming. Section 27 is rolling prairie, with numerous sloughs and patches of poplar and willow scrub. Section 28 is prairie, broken by many sloughs and small hills, with patches of poplar and willow scrub. Sections 29, 30, 31, 32 and 33 are open, hilly prairie, with many sloughs. Section 34 is hilly prairie, with many sloughs and patches of willow scrub. The northeast quarter of this section is gently rolling prairie, with a few sloughs, and is suitable for farming. Sections 35 and 36 are nearly level prairie, with thick bluffs of poplar and willow scrub in their northern parts. These sections are suitable for farming. The northeast portion of this township is suitable for farming, the remainder might be used for grazing purposes. The sloughs in this township are numerous and the majority of them are deep, and seem permanent. Alkali occurs around the edges. No traces of the Sounding lake and Fort Pitt trail could be followed through this township, although it apparently enters this township from township No. 45 in range 26.—*Lennox T. Bray, D.L.S., 1903.*

Township 54.—(East outline.)—To the south this township is slightly rolling, with a good deal of wet land and scrub. The soil is very shallow, being only two or three inches of leaf mould or black loam on a clay subsoil. There is about three miles of solid poplar woods running from section 13 to section 36, but the north half of section

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 25.

36 is steep prairie hills. This is not desirable locality for any purpose that I know of. This township may be arrived at by following along the Onion lake trail and then turning to the north.—*J. J. Dalton D.T.S., 1903.*

Range 26.

Township 40.—The route to the township from Battleford is along the Sounding lake trail as far as township 40, range 24, whence a westerly course may be taken. The latter part of this trail is indistinct and little used. The most northerly and most southerly tiers of sections in this township are rolling prairie and suitable for grazing and in part for farming. The remainder of the township is very hilly and full of sloughs and ponds. There is no timber or scrub of any account anywhere in the township. Along the south boundary and partly in section 6 there is a large hay marsh of about 200 acres. There are also some smaller ones in sections 3, 4 and 5. The quality of the hay is good. Throughout the township large grassy ponds of fresh water are common, the greater number of which are permanent. There are also several large sloughs of alkaline water. There are no springs or running streams. The supply is sufficient and permanent. There are none of the lands likely to be flooded. There are no water-powers. The general indications are that the season is somewhat late in opening. There was a heavy snowstorm on May 22 and a frost early in June. There was no other frost until the first week in September. There is practically no fuel of any kind in the township. There are no rock exposures and no minerals. Ducks, geese and prairie chickens are common everywhere. Foxes and wolves were also seen.—*Herbert J. Bowman, D.L.S., 1903.*

Township 41.—The route to the township from Battleford is along the Sounding lake trail as far as the south boundary of township 41, range 23, and thence in a north-westerly direction. The two northerly tiers of sections are hilly, sandy and considerably broken by small lakes, and not at all suited for farming or grazing. The remainder is a heavily rolling prairie of clay loam, and except sections 9, 10, 15 and 16, which are very hilly, is good for grazing and fair for farming. The two northerly tiers are also pretty well covered with scrub and scrubby poplar. There is practically no timber of any kind within a mile of the southerly boundary. Throughout the rest, bluffs of poplar are not uncommon, and along Eyeñill creek, in sections 31 and 32 a few trees have as great a diameter as 12 inches. The supply of hay is not great in this township. At Weir lake, in sections 28 and 33, there might be cut 10 or 12 acres of fair quality, and there is also some in the marshes in sections 29 and 32. There are some small fresh water ponds in nearly every part of the township, but the larger ones and all the lakes are more or less alkaline. Eyeñill creek, 15 to 20 feet wide and two to three feet deep, runs through the northwest corner of the township; it is fresh. The water supply is sufficient and permanent. There is no water-power. The general indications are that the season is somewhat late in opening. There was a heavy snowstorm on May 22 and a frost early in June. There was no other frost until the first week in September. The only fuel is poplar wood, a sufficient supply of which is easily obtained anywhere except in the southerly part of the township. There are no outcroppings of rock and no signs of minerals. Prairie chicken and ducks were common all over the township. Foxes and wolves were also seen.—*Herbert J. Bowman D.L.S., 1903.*

Township 42.—The route to this township from Battleford is along the Sounding lake trail as far as township 42, range 21, west of the third meridian, thence a course due west may be taken. Manito lake may be crossed at the narrows, in the northeast quarter of section 27. The soil throughout the township is very sandy and entirely unsuited for farming or grazing. The whole township is a succession of sand hills, and for the most part covered with scrub and bushes. Eyeñill creek enters the

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 26.

township in section 5 and flows almost due northeast into Manito lake. In section 23 there is a considerable quantity of good building timber, being poplar and balm of Gilead, reaching a size of 12 to 15 inches in diameter. In section 7 south of Lodge lake, in sections 31 and 32, and in section 12, near Manito, there are also quantities of such timber and bluffs of poplar occur all over the township. There are no hay lands in the township. The township is well watered. An arm of Manito lake stretches from the north boundary southwesterly across the township. The water is saline and unfit for use. The shore everywhere gives evidence that the water in the lake is lowering rapidly. Eyehill creek, 15 to 20 feet wide and 2 to 3 feet deep, flows a distance of about 6 miles in the township. The banks of the creek are high, but there is a ford used by the Indians quite near where the creek crosses the north boundary of section 9. The water of the creek is fresh. Besides this there are numerous ponds and small lakes, the majority of which are fresh water. None of the land is likely to be flooded. There are no water-powers. The general indications are that the season is somewhat late in opening. There was a heavy snow storm on May 22 and a frost early in June. There was no other frost until the first week in September. Poplar and balm of Gilead wood is the only fuel. It is plentiful everywhere in the township. There is no outcrop of rock and no minerals. Ducks, geese and prairie chickens were common. Foxes, wolves and red deer were also seen.—*H. J. Bowman, D.L.S., 1903.*

Township 44.—This township is partly covered by Manito lake, which takes in sections Nos. 1-14 and parts of sections 15, 16, 17, 18, 22, 23 and 24, and is reached by the Battleford and Ribstone creek trail which traverses it in an easterly and westerly direction. This is a wagon trail and in a good condition. The soil of this township is on the whole very good, being a rich loam underlaid in most cases by a good clay subsoil, and is suitable for farming. The timber of this township is mostly poplar. Trees of from three to ten inches in diameter were found adjoining Manito lake in section No. 16. Poplar from three to six inches in diameter are found in bluffs scattered throughout the township, and the ravines running to Manito lake all contain poplar of this size. The surface is nearly level and is thickly dotted with bluffs of willow and poplar scrub and is suitable for farming purposes. The quarter sections adjoining Manito lake are very rough and broken by ravines running to the lake and are mostly covered with a thick growth of willows and young poplar in numerous bluffs. These quarter sections are suitable for ranching purposes. The fuel is dried poplar and can be secured from nearly every section. There are no water-powers, no hay, no stone quarries and no indications of minerals. The climate is very good. Wild ducks and geese are found about Manito lake. The water is fresh but is very scarce in the two northern tiers of sections, except in occasional sloughs. In some of the sections adjoining the lake fresh water springs occur. Sections Nos. 25-36 and sections 20 and 21 are nearly level prairie with numerous bluffs of willow scrub and young poplar scattered throughout. Some of these poplar will measure from three to six inches in diameter. These sections are suitable for farming. The Battleford and Ribstone creek trail passes through sections 25, 26, 27, 28, 29, 20 and 19. The northern halves of sections 19, 20, 21, 22, 23 and 24 are rolling prairie and are suitable for farming. The southern halves of these sections, together with parts of sections 18, 17, 16, 8, 9 and 15, which are not covered by Manito lake, are very rough and broken by ravines running to the lake. These are covered with thick bluffs of willow scrub and poplar. In some of the ravines, poplar grows from three to ten inches in diameter, these are suitable for building purposes. A fresh water spring creek flows out of the northwest quarter of section 24 through the southwest quarter of section 24 and the southeast quarter of section 23 to Manito lake. Another fresh water spring creek flows out of section 22 through the southwest half of section 23 into Manito lake. Two fresh water spring creeks flow out of the southwest quarter of section 19 to Manito lake.

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 26.

Manito lake contains beautiful clear water but is very alkaline. The shore in some places is covered with stones and other places by a beautiful sand beach. The banks are mostly high and steep and in some places wooded with poplar.—*Lennox T. Bray, D.L.S., 1903.*

Township 45.—This township is reached by a trail called by the Indians the Sounding lake and Fort Pitt trail. This trail leaves the Battleford and Ribstone creek trail in section 25, township 44, range 26, and crosses through the southeasterly portion of township 45, in range 26, in a northeasterly direction. This is a wagon trail, and although apparently old is in fair condition. The soil of this township is very good, being a deep rich loam underlaid by a good clay subsoil, and is suitable for farming. The surface is gently rolling, with the exception of the eastern tier of sections, which are more or less prairie broken by many hills and sloughs. Willow scrub is scattered throughout the township, the thickest being near the north and west boundaries. There is no timber in this township except a few old trees which stand on the northern part of section 3. The fuel is dried poplar procured from the northern part of township 44, range 26. Very little clay is found in this township, with the exception of a little on section 9, which is of poor quality. There are no water-powers in this township, no stone quarries and no indications of minerals. The climate is very good. Wild ducks and muskrats are common. The water of the township is fresh, and lies mostly in sloughs. A small fresh water spring creek flows from section 16 southwesterly through sections 17, 8, 5 and 6, and is joined by another small fresh water spring creek flowing from section 18. Another fresh water creek, though not apparently flowing, passes through sections 20, 29, 30, 32 and 33. Section 1 is nearly level prairie, but contains a great number of sloughs and thick bluffs of willow scrub in the southern part. Section 2 is nearly level prairie in the southern part and is gently rolling to the north. It is traversed in a northerly and southerly direction by the Sounding lake and Fort Pitt trail. Section 3 is gently rolling prairie. There are a few small bluffs of poplar measuring from 3 to 6 inches in diameter standing on the southern part of this section. Sections 4 and 5 are gently rolling prairie. A fresh water spring creek flows southwesterly over the northwesterly part of section 5. Sections 6 and 7 are nearly level prairie, with patches of willow scrub. On section 6 there are a few sloughs and a fresh water spring creek flows southwesterly across it. Section 8 is nearly level prairie, with some willow scrub. Two creeks which appear to meet in this section flow southwesterly through it. Section 9 contains a large slough covering the north and southeastern parts. Some hay of a poor quality is found on this section. Sections 10 and 11 are gently rolling prairie. The Sounding lake and Fort Pitt trail traverses in a northeasterly direction the eastern part of section 11. Sections 12 and 13 are prairie, broken by many sloughs. The Sounding lake and Fort Pitt trail crosses the northwest part of section 12, and runs northeasterly through section 13. Sections 14 and 15 are rolling prairie. Sections 16 and 17 are nearly level prairie. A fresh water spring creek flows out of section 16 through section 17 in a southwesterly direction. Section 18 is nearly level prairie, and a fresh water spring creek flows out of this section in a southeasterly direction. Thick bluffs of willow scrub occur on this section. Sections 19, 20, 21, 22, 23, 26, 27, 28, 29 and 30 are gently rolling prairie. Some thick willow scrub occurs in the western parts of sections 19 and 30. A creek, though with no apparent flow, leads from section 20 into section 29, thence into section 30, returning again to section 29, thence in a northeasterly direction through sections 32 and 33. Sections 24, 25, 36 and 35 are rolling prairie, broken by many sloughs. Sections 31, 32, 33, 34 and 35 are rolling prairie, and become scrubby towards their northern parts.—*Lennox T. Bray, D.L.S., 1903.*

Range 27.

Township 44.—There are two routes for reaching the township from Battleford. One by an air line across the prairie, which I was strongly advised not to take owing

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 27.

to the absence of fuel and grass, the latter having been burnt by prairie fires. The other route from Battleford was via Poundmaker Indian reserve. The trail itself is fairly good, but Devils Drum creek close to Sweet Grass Indian reserve fairly deserves its name. Cutknife creek is also a bad one in the spring. Both these creeks could be easily bridged at a small cost. The soil is generally good, and fit for cultivation or ranching. About one-half of the township is first class, three-eighths is second class and one-eighth is third class. The surface is very rough, and covered with patches of poplar, willow and windfall (mostly from 10 to 12 years' growth). There is about one-seventh of the whole township covered with these scattered patches. There is a small quantity of poplar of somewhat larger size up to 10 and 12 inches in sections 1, 2, 3 and 4, and near Manito lake in sections 14 and 22. Generally speaking, poplar up to 6 inches in diameter can be obtained anywhere within the township by going about half a mile for it. Settlers would, I should judge, experience no difficulty in getting wood for fuel and fences for the first year or two; after that the supply is likely to be exhausted. There are no hay marshes, but the grass is generally good for grazing purposes. Manito and Duck lakes are decidedly salt, but the horses liked it. These lakes are permanent bodies of water. A sufficient supply of water, and possibly fresh, I should judge, can be obtained by digging at a depth of 20 to 30 feet. There are no streams, no chance of flooding, and no water-power. It was very cold in May; in October cold and windy, with some snow, and blizzards of a mild type were not uncommon. Fuel and wood are obtainable all over. No rock in place or mineral was observed. Geese, ducks, prairie chicken, plover, snipe and sandhill cranes were found.—*Henry de Q. Sewell, D.L.S., 1903.*

Range 28.

Township 35.—I found this township rather broken and hilly, mostly high rolling prairie, classed from second to third, with a sandy loam soil and clay subsoil. The hilly parts are covered with short but rich grasses, but small stones or boulders are scattered over the surface. It is better adapted to grazing than cultivation. A few fresh water sloughs are found, but all permanent ponds or small lakes are strongly alkaline. I found only one lake large enough to traverse. It extends across sections 10 and 11. There are no running streams, no wood of any kind, no hay of any account, no quarries and no minerals in sight. The climate seems favourable to agriculture as no summer frosts prevailed, but I presume the greatest drawback would be from dry seasons and the lack of facilities for irrigation. If irrigation were possible, the country would be very productive. No trails were crossed. Water fowl are plentiful in all ponds and lakes and prairie chicken abound. A few antelope and red foxes were seen, and in the sloughs and ponds muskrats are plentiful.—*G. C. Rainboth, D.L.S., 1903.*

Township 36.—I found this township fairly well adapted to cultivation, the soil being composed of sandy loam with a clay subsoil, classed second to third. Dividing the township diagonally from the southwest towards the northeast, the northwestern two-thirds is high rolling and hilly prairie and the southeastern one-third undulating, covered with rich grasses. Cactus lake, bitterly alkaline, crosses sections 35 and 36. Fresh water is scarce, a small lake and hay marsh in sections 4 and 10 contained the only good water found fit for use. A very fine hay meadow or marsh was found crossing sections 23, 24, 25 and 26. The northeast corner of section 23 is near the middle of the marsh with slight drainage towards the southeast. Four or five hundred tons of good hay could be cut. No streams of running water were found. There is no timber, no quarries or minerals in sight. The climate seems favourable for agriculture as no frosts occurred before September 1, and during the month of October, when I was engaged subdividing this township, we had very fine weather. The nearest fuel

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 28.

which is in the shape of small poplar, is found in the north central part of township 36, range 1 w. 4th mer., but is hardly worth mentioning. Feathered game such as wild ducks and prairie chickens are plentiful, but large game is seldom seen. No trails were found.—*G. C. Rainboth, D.L.S., 1903.*

Township 37.—This township is all open undulating and rolling prairie and although covered with rich grasses and a capital grazing country, is not very well adapted to cultivation being classed No. three. The soil is a sandy loam with hard boulder clay or sandy subsoil. A considerable quantity of alkaline flats surround the lakes of which two are of considerable extent, 'Cosine lake,' so called because of an incident which occurred during the calculation of the intersections,) lies in sections 8, 9, 16, 17, 20 and 21, and its water is bitterly alkaline; Cactus lake enters the township from the southeast corner crossing sections 1, 2 and 3 and is also strongly alkaline. Two large hay marshes, one in sections 29 and 30 and the other in sections 33 and 34, contain good water, but the hay in them is too coarse for good feed. No wood or scrub of any kind exists. An old hunter's trail leading from Sounding lake to Battleford crosses this township, but is too faintly marked to follow excepting where it passes along the edge of a marsh or other soft spot. Water fowl are plentiful and prairie chicken are found. A few antelope are sometimes seen and muskrats in all the ponds and marshes. There are no creeks or water-powers. No quarries or minerals were noticed.—*G. C. Rainboth, D.L.S., 1903.*

Township 38.—I found this township fairly well adapted for cultivation, being classed from second to third, in portions rather light but on the whole a fairly good township, the soil being a sandy loam with clay subsoil. Eyehill creek runs northeasterly through this township from sections 6 to 34, contains fairly good water, but slightly alkaline running with a current of about half to quarter of a mile per hour, with a depth of about one foot. No water-power exists in the township. It is open, undulating and rolling prairie covered with rich grasses. A small lake in section 33 extending into township 39, contains good water, and has a fringe of bush and scrub on the south side where camp fuel could be obtained. In sections 33 and 34, is another small lake but strongly alkaline. There is very little surface water. No quarries or minerals were noticed. Very little hay was seen, and no old trails were noted. The township may be reached across country from Battleford. Prairie chicken and water fowl are plentiful, while a few antelope are occasionally seen. Muskrats are very numerous along the creek and around the lakes. The climate is fairly good.—*G. C. Rainboth, D.L.S., 1903.*

Township 39.—This is a fractional township and is fairly well adapted to cultivation, being classed mostly No. two, the soil being composed of sandy loam with a clay subsoil, and is all open and undulating prairie covered with rich grasses. Eyehill creek runs northeasterly through sections 2 and 1, and has a current of about one-half mile per hour and an average depth of about one foot, containing fairly good water. No water falls or power sites. A small lake in sections 3 and 4 contains good water and is bordered with a small quantity of poplar and willow bush, where a limited quantity of camp fuel can be obtained. A few sloughs, in wet seasons, contain good surface water. Water fowl and prairie chickens are numerous, but large game scarce, except an occasional antelope. No quarries or minerals were observed. No leading trails were seen, but it is easy travelling across country north and west to Battle river and Battleford. Climate seems favourable for agriculture. No summer frosts were experienced. On the whole, it is a favourable township for settlement.—*G. C. Rainboth, D.L.S., 1903.*

Township 40.—This township is undulating and rolling prairie and is the fractional range adjoining the fourth meridian. It may be classed No. two, the soil being a rich sandy loam with clay subsoil, well adapted to cultivation and supporting a rich growth of grass. Fresh water is very scarce, being found in only two or three places in partly dried up marshes. Three lakes which were traversed contain alkaline water.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 28.

There are no streams, no wood of any kind and no quarries or minerals. There are no trails but the township is easily accessible from Battleford. The usual water fowl and prairie chickens are found, but no large game was seen. The climate is favourable for agriculture, there being no summer frosts.—*G. C. Rainboth, D.L.S., 1903.*

Township 41.—The south half of this township is open, undulating and rolling prairie, fairly well adapted to cultivation, the soil being a sandy loam with clay subsoil, and furnishes good grazing. The north half is unfit for settlement, being classed Nos. three and four, and is composed of sand hills, very much broken, and covered with small scrub and clumps of poplar varying from 1 to 6 inches in diameter. Good water is found in ponds and sloughs. Five lakes were large enough to be traversed, one of which, Dillberry lake, contains excellent water, the others being more or less alkaline. The poplar while being fit for fuel and fencing, is too scrubby and small for building purposes. A few hay marshes are found in the eastern part of the township. No quarries or minerals were seen. No creeks of running water nor trails were found. The township is quite accessible from any direction. The usual varieties of grouse and wild fowl are very plentiful in the lakes and ponds; muskrats are very numerous and traces of red deer were met with.—*G. C. Rainboth, D.L.S., 1903.*

Township 42.—This township alternates between sand hills covered with small scrub, and poplar bluffs with small openings. It is high rolling prairie towards the west with a few bluffs of small poplar. It is nearly all 4th class, the soil being almost pure sand and unfit for cultivation. Numerous lakes and ponds are met with containing good fresh water. The north boundary of the township crosses a large salt lake. The poplar is small, averaging about 2 to 4 inches in diameter, except a few bluffs near the centre of the township, where it is found larger averaging about 6 inches in diameter and would be useful for fencing and fuel. While this township is unfit for cultivation it is nevertheless valuable for firewood and would increase in value very much if the country were more protected from fires until the timber could grow larger. Water fowl, prairie chickens and partridges are plentiful. No minerals or quarries were seen and as to summer frosts I cannot say, as it was late in the fall when I made the survey of this township. No leading trails were seen, but old Indian camping grounds were frequently met with, indicating that this has been a favourite hunting ground in former years. The black-tailed deer, foxes and prairie wolves constitute the principal animals found in this section of the country.—*G. C. Rainboth, D.L.S., 1903.*

Township 44.—The trail mentioned in my report upon township 44, range 27, continues across the township. The soil is fair and best adapted for ranching, about one-half being class one and one-half class two. The surface is very rough and covered with patches of poplar, willow and windfall, about one-seventh of the whole township is covered with scattered patches of woods. There is no timber of large size, although some scattered poplar can be found up to 6 inches in diameter. Settlers would have enough for fuel and fences for the first two or three years. No hay marshes were seen but the grass is generally good for grazing purposes. Sherlock and Strike lakes are both salt. A sufficient supply of fresh water could be got by digging, as there are numerous springs. The climate is moderate and at the time the survey was made (September) there were heavy frosts at night. No stone quarries or minerals were noticed. Game: Geese, ducks, prairie chicken, plover, snipe and turkeys. There is no water-power and none of the land is liable to flood.—*Henry De Q. Sewell, D.L.S., 1903.*

Townships 49 and 50.—This locality, the centre of which is the townsite of Lloydminster, is reached either from Edmonton or Battleford by trail. The trail from Battleford is very much travelled by the English colonists at present. The soil is generally a deep rich black loam averaging a foot or more in depth and is especially suitable for the growth of all kinds of cereals. The general surface is rolling prairie with a great many patches of scrub and dry poplar which will not last very long for the present settlement, and there is no green timber to replace it. Hay is scattered over

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE THIRD MERIDIAN—RANGE 28.

the several sections in small quantities. Water is found only in the sloughs and is always fresh. Wells have been dug 40 and even 50 feet without advantage to the settlers. These wells showed a very hard and almost impenetrable clay throughout their whole depth. The season of 1903 was not a fair criterion of the climate of this district, for crops failed to the north at Onion lake and other places where they were a success other seasons. There are no minerals, coal or stone quarries. A few prairie chickens and wild ducks were the only game seen.—*J. J. Dalton, D.T.S., 1903.*

TOWNSHIPS WEST OF THE FOURTH MERIDIAN.

Range 1.

Township 37.—I found this township rather poor for cultivation, the soil varying from class second to class fourth, class third predominating. The soil while being mostly a fair sandy loam has nevertheless a very hard boulder clay subsoil which in some places, constitutes the surface as well and is mixed with small boulders and gravel. Low sand ridges occur along the south boundary in sections 3, 4 and 5. The country is undulating and slightly rolling prairie. Grasses are rich and abundant, particularly along Eyehill creek which runs diagonally through this township from section 6 to section 36. A considerable valley is formed by the creek through the central and southern part where a large quantity of hay, probably about 200 tons can be cut. The creek has an average current of about half a mile an hour, an average width of about 25 feet with a depth of from 1 to 2 feet. Its water is good but slightly alkaline. Very little surface water exists. No quarries or minerals were seen. A few small poplar bluffs extend along the base line and will furnish a few cords of fuel. Wild fowl and prairie chicken are plentiful and a few antelope are occasionally seen. An old hunter's trail from Battleford to Sounding lake passes through the township but is almost obliterated.—*G. C. Rainboth, D.L.S., 1903.*

Township 38.—I found this township to be very well adapted to cultivation, the soil being composed of a rich sandy loam with clay subsoil classed from first to second. The surface is undulating to rolling prairie covered with rich grasses. There is no timber. A large hay marsh extends across about the middle of section 27, from which in a dry season could be cut from 30 to 40 tons of fair quality of hay. A few other small hay marshes are found. Surface water is all that exists; no permanent lakes are found. Fresh water is found in nearly all the sloughs; there are no streams. Climate is favourable; no summer frosts were noticed. Fuel in scattered bluffs is to be found 12 miles to the north affording a limited quantity of poplar wood, for fuel only. There are no quarries or minerals in sight. Game such as wild fowl is found in abundance, but no large game. The route for reaching this township is from Battleford across country. An old trail, very hard to follow, known as the Sounding lake trail, passes about seven miles east of the township.—*G. C. Rainboth, D.L.S., 1903.*

Township 39.—I found this township well adapted to cultivation, the soil being composed of a good sandy loam with clay subsoil, classed from second to third. Surface is undulating prairie covered with rich grasses, a fine grazing country. Good water is found in numerous sloughs. All the large lakes of which four were large enough to traverse, contain water strongly alkaline, except one which extends across sections 11, 12, 13 and 14, and contains beautiful clear fresh water, which on account of its clear blue colour, I called 'St. Lawrence lake.' No running streams were found. A small clump of willow and small poplar averaging two inches in diameter was found on the southwest shore of St. Lawrence lake, otherwise no wood or fuel, no quarries or minerals were seen. Wild ducks and prairie chickens are plentiful, but no large game was seen. Climate is favourable for agriculture. There are no large hay meadows, nevertheless hay can be cut around the sloughs but only in limited quan-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 1.

tities. The route for reaching this township is from Battleford across the prairie, but there are no travelled trails.—*G. C. Rainboth, D.L.S., 1903.*

Township 40.—I found this township well adapted for cultivation, the soil being composed of a rich sandy loam with a rich clay subsoil classed from first to second. The surface is undulating, except in sections 34 and 35, which are rolling and hilly. The whole township is open prairie covered with a luxuriant growth of grass, being a magnificent grazing country as it has numerous fresh water ponds and sloughs with a few hay meadows. There are no large lakes, no wood, no quarries or minerals and no running streams. Wild fowls and prairie chicken are found in abundance and a few antelope were noticed. The route to Battleford lies across country, no trails being visible.—*G. C. Rainboth, D.L.S., 1903.*

Township 41.—This township is well adapted to cultivation and stock raising. It is high rolling and hilly, the southern half being open prairie and the northern half dotted with poplar bluffs, the poplar averaging from 2 to 3 inches in diameter. The land is classed from second to third, and consists of a sandy loam with clay subsoil, except in sections 35 and 36, where it is more sandy, merging into sand hills. A large lake extends along the northern boundary of the township from sections 31 to 34, and is called Killarney lake on the township sketch. Its water is alkaline. Another good sized lake, also strongly alkaline, extends across sections 34 and 35 and southerly into sections 26 and 27. A fair sized creek with good water runs into Killarney lake from the southwest from which lake no outlet was found. Good water is also found in several sloughs and springs in the hilly parts of the township. There were no large hay meadows, quarries or minerals in sight and no trails were noted. Water fowl and prairie chicken are very plentiful. Black-tailed deer are found among the bluffs, and muskrats are numerous about all the ponds and lakes.—*G. C. Rainboth, D.L.S., 1903.*

Township 42.—This township is hilly and rolling prairie, dotted with bluffs of small poplar and with small ponds and lakes interspersed. The soil is chiefly a sandy loam with clay subsoil, classed from second to third, well adapted to cultivation, but rather hilly for farming purposes, but it is an ideal township for grazing. Although no extensive hay marshes were found considerable hay could be made around the margins of the numerous ponds and marshes. No leading trails, rock exposures or water courses were seen. The poplars in the bluffs were small, averaging about 3 inches in diameter; None large enough for building purposes were noticed. Water in the marshes is generally good but in the lakes it is alkaline. The south boundary of the township crosses Killarney lake from sections 3 to 6. The northeast corner of the township is in another large lake. Water fowl and prairie chickens are abundant, and traces of black-tailed deer were in evidence. Foxes, prairie wolves and muskrats constitute the fur-bearing animals. As it was well advanced in the fall when this township was surveyed, I cannot say as to whether there were any summer frosts. Communication with this township is easy from Battleford, as it is fairly good travelling with wagons across the prairie.—*G. C. Rainboth, D.L.S., 1903.*

Township 43.—We reached this township from Saskatoon and Battleford. The present mode of travel is by wagon road, which is very good during summer months, except where the frost is going out, the distance being about ninety miles. From Battleford take the trail westerly along the southerly side of Battle river. This is a very good road during the summer months, in fact all the season excepting while the streams are overflowing their banks during the melting of the snow in spring. There are no bridges crossing these streams, and it would be dangerous crossing while they are in flood. The surface of the township is prairie; hilly, with groves of poplar amongst the hills. The prairie is pretty clear of scrub. In the southern part of the township there are a great many ponds and lakes, some of which are a considerable size. There is not very much timber, but there is a little in sections 22, 23, 24, 25, 26 and 27. In some of the groves the trees are from 6 to 10 inches in diameter, and

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 1.

occasionally are 1 foot in diameter, but the trees are generally short and stunted, being in sandy soil. There are no large hay meadows in the township, but considerable could be cut from the numerous sloughs. The water throughout the township is alkaline. A few of the sloughs contain some that is fairly good. There are no streams in the township, and consequently no water-power. The climate is similar to Manitoba; perhaps not quite so much rainfall. This season being wet and cold all through the territories, it is difficult to judge as to climate. This season there was considerable frost during August and September, destroying a great many of the vegetables, but I would not consider this usual. No fuel is found except the poplar timber in the groves scattered through the township. No coal was seen or any sign of it. No stone quarries were observed in the township, but there is some field stone along the hill-tops. Chickens, ducks, geese, partridge, &c., were quite plentiful, but no large game was seen. The soil is part clay loam and part sandy loam, the northeasterly and southwesterly portions being sandy loam and the balance clay loam, about one-third being sandy loam and two-thirds clay loam. The township is rather hilly for agricultural purposes, but a number of good quarter-sections could be selected for farming purposes.—*Lewis Bolton, D.L.S., 1903.*

Township 44.—The trail mentioned in reports on townships 44, ranges 27 and 28, west of 3rd meridian, continues across this township. The soil is generally first-class, except in the sand dunes and vicinity which comprises more than half, or more correctly, as 8 is to 9. This land, in the sand dunes, is absolutely a desert, a small portion on the confines, classes second and third, is good land as far as it goes, but owing to a large portion being sand, it is classed low. The township is equally fit for cultivation or ranching. The country is very rough and covered with patches of poplar and willow, largely of twelve years' growth or thereabouts; about one-seventh of the township is covered with these patches. In some of these scattered patches the poplar runs up to six inches. Settlers will have all the wood they require for one year, but after that there will be little left. There are no hay marshes of any great extent; the hay is, however, excellent and the grass good for grazing purposes. The township is fairly well watered, some of the lakes being fresh and the rest more or less alkaline, but good water could be had by digging 20 or 30 feet almost anywhere. Fuel is obtainable all over. Good sandstone can be obtained at Ribstone creek, and I am confident from the geological features of the country that coal exists all over the township, probably within 300 or 400 feet of the surface. Game consists of geese, ducks, prairie chicken, plover and snipe. Ribstone creek is from two to five feet in depth, gets swollen in spring, but cannot flood the country. There is no water-power.—*Henry de Q. Sewell, D.L.S., 1903.*

Township 45.—We reached this township by Canadian Pacific railway from Regina to Prince Albert, from there by horse conveyance to Battleford, thence westerly along the old Edmonton trail to township 47, range 1, west of the fourth meridian, thence southerly across the prairie to the township corner, there being no established road or trail. The soil is somewhat varied, running from sandy loam to clay loam; the soil throughout is fairly good for agricultural purposes, being chiefly clay sub-soil. The surface is prairie, that portion north of the valley of Battle river is gently rolling. The banks on either side of the valley are very high, averaging between 200 and 300 feet above level of river flats; that portion south of the valley is very rolling, and in some places hilly. The timber is nearly all poplar. Outside the valley of Battle river the timber is small, not many trees over six inches in diameter. Along the river bank there are several groves of balm of Gilead, many of them large enough for building purposes. Through the northwesterly portion of the township there are a number of bluffs of considerable size, but the timber is small. There is no hay land in the township of any account only in the valley of Battle river, in a few places where there appear to be springs coming out of the banks of the valley, especially on the north side

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 1.

of the river. The township is well watered. Battle river enters the westerly boundary of the township in section 19 and flows through sections 18, 17, 8, 9, 10, 11, 12, and touches sections 1, 2 and 3. The water in the sloughs throughout the township is fairly good. There is no water-power in the township; the fall of Battle river is not sufficient, and the valley too wide to construct a dam. There is no fuel excepting in the poplar bluffs through the township, the trees being quite small. Along Battle river there is considerable large willow that would make good fuel. We saw no stone in the township other than field stone. No minerals were found, nor any mineral-bearing rocks. Ducks, geese, chickens, partridge and sandhill crane were quite numerous, especially along Battle river. A few deer, foxes and prairie wolves and one bear were seen in the township. The season being a very cold and wet one throughout the whole country makes it extremely hard to judge as to climate. I would consider that it compares very favourably with Manitoba. Several heavy frosts occurred in August and September, doing serious damage to vegetables, but I do not think this occurs every year.—*Lewis Bolton, D.L.S., 1903.*

Township 46.—This township was reached from Saskatoon by wagon to Battleford, thence westerly on the old Edmonton trail to township 44, range 1, west of the fourth meridian, thence south into this township. The soil is a clay loam averaging from 4 to 6 inches in depth, with clay subsoil, and makes fair land for agricultural purposes. The surface is prairie; the northerly part rather hilly, as also the southeasterly portion. Considerable stone is scattered over the township (not large) they are chiefly on hilltops. The southwesterly portion of the township is gently rolling, with a number of small willow sloughs. Poplar is the only kind of timber and is found in small bluffs scattered over the township. Little or none of it is large enough for building purposes as scarcely any of it is over 6 inches in diameter. There is not much hay land in the township: some is to be found in sections 29 and 30, this being the only hay meadow of any extent in the township. There are a few small sloughs in the south part of the township, with hay in them, but only in small quantities. The water in the sloughs is fairly good. Blackfoot coulee, the water of which is fairly good, cuts into the township in sections 36, 13, 12 and 1. This is the only stream in the township. There is no water-power in the township. Blackfoot coulee has not sufficient water in it, for in a dry season it would be dry most of the summer. There is not much fuel, the timber is very small and in small bluffs scattered over the township. No stone quarries were seen, and no minerals were found nor any mineral-bearing rocks. Ducks, geese, chickens and partridge were quite numerous. A few deer, foxes and prairie wolves were seen. The season being an extremely wet and cold one all over the Territories and Manitoba, it would be difficult to judge as to the average weather. I would consider it to be quite as mild as Manitoba.—*Lewis Bolton, D.L.S., 1903.*

Township 47.—We went by Saskatoon via Prince Albert branch of the Canadian Pacific Railway, at which point my party had to wait 6 days for delayed baggage, from this point by wagons and horses by road to Battleford, where we obtained supplies, and thence by same conveyance westerly along the Edmonton trail to the northeast angle of township 47, range 1, west of the fourth meridian, where we commenced work on May 8. The soil is a clay loam averaging from 4 to 10 inches in depth, with clay subsoil, and is good land for agricultural purposes. The southerly and westerly portions are somewhat hilly, the hilltops being partially covered with rolling stones, not large; the balance of the township is gently rolling prairie. Small bluffs of small poplar occur in sections 3, 4, 5, 8, 9, 10, 15, 16 and 17, these being the hilly portion of the township. Poplar is the only kind of timber and is found in small bluffs chiefly on the north side of the hills and around the sloughs, very little of which is over 6 inches in diameter. Not much hay land is found in the township, only in the small sloughs scattered through the township. The water in the sloughs is fairly good, not much being alkaline. This season being showery and very wet the sloughs were full during

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 1.

the whole summer. In Blackfoot coulee there was a stream flowing all season, the water was very dark in colour. This stream enters the township in section 34 and flows southeasterly through sections 27, 22, 23, 14, 13, 12 and 1; that portion through sections 34 and 27 is sluggish, the rest is more rapid. In a dry season water would likely be scarce, there being no springs so far as we observed. There is no water-power. The only fuel found in the township was in the small bluffs of poplar timber situate in the sections above named. We did not see any signs of coal or lignite veins. We did not see any minerals and would not suppose there were any in the township. Prairie chickens and ducks are quite plentiful, and there are a few partridge, very few deer and not many wolves or foxes. This season being an off season it would be hardly fair to judge the climate of this district by the past summer, but on our arrival there in the early part of May, we found the remains of last winter's snow to the depth of 3 to 4 feet in some of the bluffs of timber, and were unable to get pit holes deep enough in some cases, for frost, during the first two weeks of our work; during the balance of the month of May it was very cold and backward. For one week, about the 20th it snowed more or less, portions of which time were very stormy. The months of June, July, August and September were very wet and cold, the sky being clouded the greater part of the time, so much so that we were unable to observe for azimuth. A very sharp frost occurred about the last of August, which cut down the potatoes and vegetables. The first snow fell on the evening of September 21, and remained the next day, disappearing on the second day. September was very wet and cold throughout. The last two weeks of October and the first two weeks of November were very pleasant, being clear and bright.—*Lewis Bolton, D.L.S., 1903.*

Township 48.—We went through Regina to Saskatoon per Prince Albert branch of Canadian Pacific railway, from there by wagon road to Battleford, about ninety miles, a very good road considering the distance to construct it, and the nature of the country through which it passes. From Battleford we went westerly along the Edmonton trail, which is a very fair road during the summer months, but early in the spring it is very soft in many places while the frost is going out. This trail passes through the northerly portion of the township. The township is rolling prairie, generally, some parts inclined to be hilly, but not to any great extent, mostly clean prairie, not much scrub, but a very little timber in small groves in sections 1, 12, 27 and 28, mostly 2 to 4 inches in diameter. Not much hay is found in the township, but along Blackfoot coulee and in the sloughs near by a limited supply could be had. There are no streams of water in the township excepting Blackfoot coulee, the water of which is not very good. The upper part of the coulee having very little fall, the water is stagnant and very strongly impregnated with vegetable matter. There are very few deep sloughs throughout the township and in an ordinary season water would be scarce. There is no water power in the township. This season having been wet and cold makes it difficult to judge as to the general climate, but I would think it to be quite as mild as Manitoba, perhaps quite as subject to summer frosts. There were quite heavy frosts in August and September, destroying the vegetables, but I would not suppose that this would occur in an average season. There is no fuel in the township excepting the poplar timber in the small groves and they are only a few. No sign of coal was seen in the township. No stone quarries were observed and very little stone of any kind was seen. Chickens and ducks were about the only game seen in the township. A few foxes, but no deer were seen in that vicinity. The soil throughout the township is clay loam averaging 4 to 6 inches with clay subsoil and will be good for agricultural purposes: some excellent quarter sections are to be found along the banks of Blackfoot coulee.—*Lewis Bolton, D.L.S., 1903.*

Range 2.

Township 37.—I found this township as classified for cultivation to be from class 2 to 3, but class 3 predominates. The soil while being mostly fair sandy loam, has

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 2.

nevertheless a hard boulder clay subsoil which in some places constitutes the surface as well. The country is undulating to rolling and hilly prairie covered with rich grasses and is an ideal grazing country. Eyehill creek runs easterly across the township from section 6 to section 12, forming a considerable valley, but without abrupt edges, and it has a current of about one half mile per hour while varying in width from 30 to 50 feet with an average depth of about 1 foot. Its water is fairly good for use, but is slightly alkaline. Only two lakes were found large enough to traverse and a few fresh water sloughs are found. The water in the lakes is strongly alkaline and unfit for use. There is no wood in the township, but a few small bluffs of small poplar are found in section 36, township 36, range 2, but would furnish little fuel. As for fuel for future use in this country coal will have to be used and unless found in the immediate vicinity will have to be transported by rail from the coal beds of the Red Deer and Saskatchewan rivers where it is known to exist. No quarries or minerals were seen. An old trail shown on the general map was seen in section 36, but it is very faintly visible now, and would be hard to follow. There are no regular routes to any place. Hay flats occur along the valley of Eyehill creek, where a few hundred tons of hay can be cut. Game consists of wild ducks along the creek and in the lakes and sloughs; prairie chicken are plentiful but antelope have almost disappeared from the country. Muskrats are about the only fur-bearing animals found in the ponds and along the creek. The climate is favourable for agriculture, there being no summer frosts before September 1.—*G. C. Rainboth, D.L.S., 1903.*

Township 38.—I found this township fairly well adapted to cultivation, the soil being composed of a sandy loam, with clay subsoil, classed from 2 to 3. The surface is undulating to rolling prairie covered with rich grasses, but having no timber. A few hay marshes are scattered over the township, but none of any extent. Water is found in a few small ponds, mostly alkaline, except in a few grassy sloughs, where fresh water is found fit for use. In dry seasons these latter would probably be dry, but this season having been wet, fresh water was plentiful. No streams exist. No quarries or minerals were seen. A small quantity of poplar wood for fuel is found at the southeast end of a lake in section 11, township 39, range 2, and is the nearest available. Wild fowl such as ducks and prairie chickens are plentiful, but there is no large game except a wandering antelope or so. The route for reaching this township is across country from Battleford. An old trail going towards Edmonton is marked on the general map, but can only be distinguished in spots passing in the south end of the township.—*G. C. Rainboth, D.L.S., 1903.*

Township 39.—I found this township fairly well adapted to cultivation, the soil being composed of sandy loam, with clay subsoil, classed from 2 to 3. The surface is undulating to rolling prairie, covered with rich grasses. No timber. A few hay marshes are scattered over the township, but none of much extent. A good sized lake extends across from section 11 to section 9, but has alkaline water unfit for use. Fresh water is found in a few sloughs. The water is permanent, but the ponds or lakes are alkaline. In dry seasons fresh water would be extremely scarce, but this season having been wet, fresh water was plentiful. No streams and no quarries or minerals exist. A small quantity of fuel can be found along the southeast end of the above mentioned lake which I called 'Fleeing Horse lake,' on account of an incident that happened to our party. Wild fowl such as ducks and prairie chicken are numerous, and a few antelope are occasionally seen. The route for reaching this township is across country from Battleford. No trails were met with.—*G. C. Rainboth, D.L.S., 1903.*

Township 40.—I found this township well adapted for cultivation, the soil being composed of a rich sandy loam, with a clay subsoil classed 2. Surface is undulating prairie covered with good grasses, making a fine grazing country. Very little surface water such as fresh water ponds or sloughs exists. A long lake (alkaline) extends through from township 39, range 2 northward as far as section 26, in this township.

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 2.

and forms a sort of basin in the easterly part of the township. No wood or bush; no quarries or minerals exist, and there are no running streams. Wild fowl and prairie chicken are numerous, but we saw no large game. The township may be reached across country from Battleford. No trails were seen.—*G. C. Rainboth, D.L.S., 1903.*

Township 41.—This township is very little adapted to cultivation, although well suited for grazing; the class of soil varying from second to fourth, the latter class being sand, while class second is a sandy loam, with clay subsoil. A large, low, flat of swampy land extends from section 9 northeasterly to section 26, through which a small creek flows northeasterly into township 41, range 1. Numerous small bluffs of small poplar are found in the northern part of the township. Numerous small ponds of good fresh water are found; others contain alkaline water. No quarries or rock exposures or minerals are in sight. Wood for fuel can only be found to a very limited extent in the bluffs of poplar above mentioned. No hay marshes of any extent are found excepting in the low flat land above mentioned, where the hay could not be cut by machinery as the ground is too soft and boggy. A limited quantity of hay can be cut around the small ponds and marshes. The route to this township is across country, there being no trails visible.—*G. C. Rainboth, D.L.S., 1903.*

Township 42.—This township is high rolling prairie dotted with small bluffs of small poplar and willow scrub. Soil is from first to third class, mostly second class, being a rich sandy loam with clay subsoil, and well adapted to cultivation and grazing. Grasses are rich and nutritious. Surface water is in sloughs and ponds, plentifully scattered over the township. The slough water is fresh and good, but in the ponds and lakelets it is more or less alkaline. No quarries or minerals were found. Firewood for camp purposes is abundant. Small quantities of hay can be cut at the edges of the sloughs; even the upland grasses in many places grow high enough to cut for hay. No trails were noticed, but the township is easy of access from Battle river, Ribstone creek or Battleford. Water fowl and prairie chickens are numerous. Large game, such as the black-tailed deer and antelope, are found. The fur-bearing animals are muskrats, red foxes, a few badgers and prairie wolves. The climate is favourable for farming, no summer frosts being noticed.—*G. C. Rainboth, D.L.S., 1903.*

Township 43.—We went from Regina to Saskatoon over the Prince Albert branch of the Canadian Pacific railway, from which point Battleford has at present to be made by horses and wagon. By the wagon road, which is very good during the summer months, the distance is about 90 miles. From Battleford take the trail along the south side of Battle river. The road is very good during the summer, but in the early spring while the streams are full owing to the melting snow, it would be difficult to pass along this trail as there are no bridges across the streams. This trail passes about one to two miles north of the township. The surface of the township is prairie, the northerly part somewhat rolling and the southerly part hilly. The surface is generally clean prairie, with very little scrub. In the southerly part there are numerous ponds or small lakes containing very bad water. There are no streams except Ribstone creek in the township. This stream cuts through the northwest corner of the township, is very rapid, averaging from twenty to thirty feet in width and from three to four feet in depth, and its water is fairly good. Very little timber is found in the township. A few groves in the southwesterly part contain some fairly good sized trees, but the soil in that part being sandy the trees are short and stunted. No large hay meadows were found in the township, but in the sloughs and along Ribstone creek a considerable quantity could be obtained. The water throughout the township is very poor (alkaline), with the exception of that in Ribstone creek, which is not very good, having considerable vegetable matter in it. There is no water-power of any value in the township. Ribstone creek where it passes through the township has very low banks, and could not be used for power without overflowing a large tract of country. The climate is similar to Manitoba; perhaps not quite so much rainfall or snowfall. This

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 2.

year there was frost during August and September, doing considerable damage to growing vegetables, but I would not consider this usual. There is very little fuel in the township; the few groves scattered over the township would last but a short time in case the township were settled. No sign of coal was seen in the township. No stone quarries were observed, and not many field stones. Chickens, ducks, geese, partridge, &c., were quite plentiful, but no large game such as deer, bears, &c., were seen. The soil is partly clay loam and partly sandy loam, the northeasterly portion being clay loam and the southwesterly sandy loam. A good portion of the township would be good for agricultural purposes, say two-thirds of it, the balance of the soil being rather light for that purpose.—*Lewis Bolton, D.L.S., 1903.*

Township 44.—The trail mentioned in the reports on township 44, ranges 27 and 28, west of third meridian, and range 1, west of fourth meridian, continues across this township. There is a bad crossing at Ribstone creek, with an unusually heavy grade on the west side. This creek could be easily bridged and the west side graded at a small cost, though it will probably be found desirable to shift the crossing a little to the north of the present trail where the natural grades are much better. The soil is all first class, and is ideal land for farming purposes. It is covered with patches of poplar, willow and windfall, largely second growth, with some poplar up to 6 inches in diameter; about one-seventh of the township is covered with these patches. Settlers will have about enough wood for fuel and building for the first year; after that they must look out for themselves. There are some good hay marshes, but in very small patches, the land being mostly high and dry. The hay is excellent and the grass good for grazing purposes. Ribstone creek passes through this township. It is slightly alkaline, but we drank it and were thankful to get it. There are some springs of fresh water running into it, mostly on the east side. Cameron lake is salt. Settlers will have to dig for water, and should get it of good quality within 30 feet. Fuel is obtainable all over. Good sandstone quarries can be opened up along Ribstone creek. I am confident that coal exists all over the township, probably within 200 or 300 feet from the surface. Game: Duck, geese, prairie chicken and plover. There is no water-power. Ribstone creek is 4 to 10 feet deep, and banks too high for flooding. There is no timber suitable for lumbering.—*Henry de Q. Sewell, D.L.S., 1903.*

Township 45.—We reached this township from Battleford via the trail on the south side of Battle river westerly to range 2 west of the fourth meridian in township 44, thence northerly across the prairie into township 45, range 2. The soil is chiefly clay loam with clay subsoil; the southerly portion is heavier clay than the portion north of Battle river. The soil throughout the township is well adapted for agricultural purposes where the land is not low and wet. The southwesterly portion of the township is flat and low, but can be drained easily by cutting artificial drains or ditches through the meadows and sloughs into Battle river or into the lake in section 16. That portion of the township north of Battle river is rolling prairie with very little timber. That portion of the township north of Battle river is rolling prairie with very little timber, that south of the river is level with numerous groves of small poplar, some of the groves being quite large. The trees are small, not many over 6 inches in diameter; the timber is chiefly alive. The valley of the river is from 1 to 1½ miles in width with very steep banks, very difficult to traverse with wagon and horses. I would judge the tops of the banks to be from 200 to 300 feet above the flats of the river. Poplar is the only timber found in the township. That portion of the township south of Battle river is full of groves of small poplar and if protected from prairie fires for a number of years, would get to be a solid forest, especially in the easterly portion. Along the valley of Battle river there are numerous hay meadows, also in the southwesterly portion of the township. The township is well adapted for ranching, having plenty of hay and protection for the cattle and horses in winter. There is plenty of water. Battle river flows through the centre of the township from west to east and there are numer-

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 2.

ous springs along the banks of the valley of the river. In that portion of the township south of the river valley there are numerous sloughs in which the water is fairly good. The water in Battle river is good when allowed to settle, there being quick sand in it. There is no water-power in the township. Considerable fuel in the shape of poplar timber is scattered over the southerly portion of the township in groves, and along the banks of the river there is large willow, good for fuel. There is sufficient in the township to last for a good many years if protected from prairie fires. We saw no minerals in the township nor any mineral-bearing rocks. Prairie chickens, partridge, ducks, geese and sandhill cranes abound, especially along Battle river. Very few deer or bear were seen. Foxes and prairie wolves are more plentiful. The present season was very wet and cold with considerable frost in August and September, this being the case through all the Territories, it would be unjust to say that the average season would be such as this. I would think the summer should be quite as mild as in Manitoba with probably not so much rainfall in summer or quite so much snow in winter. I would consider this township well adapted for ranching.—*Lewis Bolton, D.L.S., 1903.*

Township 46.—We reached this township from Regina by the Prince Albert branch of the Canadian Pacific railway to Saskatoon, Sask., thence by wagon road to Battleford, thence westerly along the old Edmonton trail into township 47, range 2, west of the fourth meridian, thence south across the prairie into this township. The soil is chiefly clay loam but in some parts mixed with sand. I would consider the soil very good for agricultural purposes; not many sloughs exist and it is well drained by coulees, forming in the northern part of township and running southerly into Battle river in township 45, range 2, west of the fourth meridian. The loam would average from 4 to 6 inches in depth. The surface is gently rolling with a few hills in the northeast part; in the southern portions the banks of the coulees are quite steep with small creeks in the bottoms, especially towards the southerly portion of the township. The prairie is very clear of scrub of any kind and would be easily broken up for farming. There is not much timber in the township, chiefly small poplar in small groves scattered through the township, but no timber large enough for building purposes. No hay land occurs in the township except in small meadows in the coulees. There is very little water in the township outside of the coulees and in an ordinary season the supply would be very limited; the present season being a very wet one water was quite plentiful in the few willow sloughs and coulees, and of very fair quality. There is no water-power and no fuel except the small poplar in the groves scattered through the township which would be exhausted in two or three years in case the township were settled. I did not see any minerals nor any mineral-bearing rocks. There are not many stones in the township. Prairie chicken and partridge were plentiful, but not many geese or ducks, there being no ponds or lakes in the township. Some foxes and wolves but no sign of deer or bears. This being a very wet and cold summer all over the provinces makes it difficult to judge as to the average climate. I would say that in comparison with Manitoba there is not much difference, likely less snow and rain. Considerable frost in August, hard enough to destroy vegetables. The summer was very cloudy, especially the nights which were very cool.—*Lewis Bolton, D.L.S., 1903.*

Township 47.—We reached this township from Battleford via old Battleford and Edmonton trail, which crosses the northern portion of the township. The soil is chiefly clay loam with clay subsoil, the southwesterly and westerly portions are inclined to sandy loam especially around the lakes which appear to have lowered very materially in the last twenty years. The soil on the Blackfoot hills is very heavy clay. The northern portion of the township is very hilly, a range of the Blackfoot hills traverses sections 34, 35 and 36. The balance of the township is chiefly prairie. There is very little timber in the township, what there is is very small poplar in small groves

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 2.

around the sloughs and ponds. No hay meadows of any size were found in the township, but in the ravines amongst the Blackfoot hills there was a good growth of grass not sufficiently high to be cut with a mower; but it would be suitable for grazing. There is very little water fit for domestic purposes; some of the willow sloughs have fairly good water, but only to a very limited extent. The water in the lakes is very bad, all of them being alkaline. There is no water-power in the township. We did not see any minerals in the township nor any mineral-bearing rocks. Prairie chickens, ducks and geese were quite plentiful. There were very few deer; not many foxes or wolves. This season being a very wet and cold one with considerable summer frost, it would not be just to say that the average season would be so wet and cold as this. I would say that it compares very favourably with Manitoba, with possibly a little less snow in the winter. This summer there were several frosts in August that would destroy potatoes or vegetables of any kind.—*Lewis Bolton, D.L.S., 1903.*

Township 48.—We travelled from Regina to Saskatoon per Prince Albert branch of Canadian Pacific railway, from which point horse and wagon conveyance is the only way to travel by wagon-road to Battleford, being about 90 miles, a very good road, considering the distances to construct it, and the nature of the country through which it passes. Battleford to Lloydminster by the Edmonton trail, which is a very fair road except while the frost is coming out. This trail passes through this township a few miles west of Lloydminster. The township is principally prairie, the northerly portion clean prairie with little or no timber; the southerly portion being in the Blackfoot hills, is very rough and hilly with considerable scrub in the valleys. There has been considerable timber amongst the Blackfoot hills, but it has been killed by prairie fires and the remaining is becoming more or less rotten, and if not used as fuel in a year or two will not be of much value. Poplar is the only kind of timber in the township. Considerable quantities of hay could be obtained in the sloughs amongst the Blackfoot hills. Considerable feed for cattle is to be found in the ravines amongst the hills, wild pea vine, vetches and other wild grasses are quite luxuriant. Water is quite plentiful amongst the hills, but is more or less alkaline; in some places springs are to be found with very fair water. As there are no streams in the township there is no water-power. Owing to this season having been wet and cold throughout the whole North-west it is hard to compare it with other portions. Heavy frosts occurred in August and September, but I do not consider this usual. I would consider the climate to be quite as mild as Manitoba, with perhaps less snow and less rainfall. There is no sign of coal in the township. No stone quarries were seen and very little stone of any kind was found in the township. Chickens, ducks, partridge, and a few geese were about the only kinds of game found in the township. The soil is chiefly clay with 4 to 6 inches of loam on top; the soil is good for agricultural purposes, but the general surface of a great portion of the township is rough and hilly, too much so for farming, but it would be excellent for ranching, as feed for cattle is very abundant amongst the hills and ravines.—*Lewis Bolton, D.L.S., 1903.*

Range 3.

Township 34.—This township is accessible from the south and along Sounding creek on the west. Soil is mainly an alkaline sand on the west half and hard clay on east half, all more or less mixed with gravel and stones. There is little or no vegetation; my horses almost starved while working in this township. The surface of all but the south 2 miles is composed of hills, not in ranges, but irregular and with gravel and boulders. A deep ravine has been worn through the hills on sections 28, 29, 20, 21 and 17 through which that part of the township is drained into a lake on sections 18 and 19. An alkaline flat and marsh is located on sections 5, 8 and 18, which drains by a small creek into a lake on or about section 11, township 34, range 3, and partly into a

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

lake running southeasterly from near the northwest quarter of township 33, range 3 to the southeast corner. The south 2 miles is gently rolling land, with a descent towards the last mentioned lake. There is no timber in this township. Fuel had to be brought from the Neutral hills in 36—3. Some years hay may be cut on the flats in sections 5 and 8, but this year it is no good, as the flats are too wet. Fresh-water can be had in some of the small sloughs, but the lakes, marshes and large sloughs are more or less alkaline. There are no water powers, fuel, stone quarries or minerals, and very little game.—*Henry W. Selby, D.L.S., 1903.*

little game.—*Henry W. Selby, D.L.S., 1903.*

Township 35.—This is a high, rough, hilly and rolling township, having its north forming the south slope of the Neutral hills. It is accessible from any direction. A trail from Medicine Hat passes near the southwest corner, but is not much travelled. My freight trail passes almost east from a point about 7 miles south of the Nose hills, where it bends slightly to the northwest to join the rancher's trail from Lacombe or Red Deer. This is an excellent trail for dry weather, but during rainy weather will require watching to avoid alkali flats and creek crossings. The soil is generally a clay, mixed largely with gravel and boulders, very hard to dig, as it seems to be cemented together with alkali or gumbo. An exception may be made in the greater part of the west 2 miles, where the soil is a fair clay loam on clay subsoil, but the tops of the hills invariably have numbers of boulders. The numerous hills being abrupt and having numerous sloughs between them makes it totally unfit for agriculture, except the east half of section 2, and the west half of section 1, which are gently rolling and of good soil but stony. A deep ravine cuts the Neutral hills on section 33 and continues southwesterly forming the outlet for the drainage of nearly the whole of the north 2 miles. South of this the hills rise slightly for about a mile, on the easterly side of this rise, an alkaline basin is found, with a large number of sloughs, ponds and one lake. This basin, full of hills, occupies a large part of the central 6 sections of the township. The east 2 miles is all hills and sloughs. The southwesterly 3 miles is composed of hills from 50 to 150 feet high, irregular or not in ranges, with sloughs between them. One deep ravine runs through 6 and 7. This latter part of the township is full of boulders; the tops of some of the hills being almost a mass of stones. Vegetation is fairly good in the valleys, but is very light on the hills. This township is only fit for grazing purposes and not too much of that. There is no timber of any kind, nor hay lands. Many of the sloughs are fresh water, but most of the large ones are more or less alkaline. Summer frosts appear to have been here. There is no fuel of any kind and no stone quarries or minerals were seen. Ducks and geese and a few antelope were the only game noticed.—*Henry W. Selby, D.L.S., 1903.*

Township 36.—An old cart trail (now almost obliterated) from the east passing through the north tier of sections, forms an easy route for reaching this township from that direction. From the west the crossing of Sounding creek, which is good only in places, makes it more difficult of access from that direction. Freighting was done from township 40, range 6, around the west end of Sounding lake this year. The north end of the township lies mainly in a flat or hay marsh extending from Eyehill creek in township 37, range 3 southerly, but the land rises gradually to the south, and in the second tier of sections becomes small sand hills, more or less covered with poplar bush from 2 to 10 inches in diameter. The south boundary of this tier of sections nearly marks the line between the sand hills and the sandy loam soil forming the general surface of the lower parts of foothills. These extend southerly to the south boundary of the third tier of sections in the west half, and from these southwesterly to the south boundary of the fifth mile. This latter line forms about the foot of the high hills, which, I believe, are known as the Neutral hills. These hills rise to the south a height of 400 feet above the fifth mile, on the west side of a small water course in a valley

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

breaking through the hills from the southwest in sections 3 and 4 and descend rapidly to the south boundary; while on the east of the water course the hills rise to their highest point, a short distance south of the south boundary and near the township corner. The Neutral hills are clay, gravel and boulders, with intervening valleys and ravines of very fine clay loam soil, which grows good feed for grazing purposes. The hills are not in ranges, but are very much broken up, so that it is impracticable to show more than some of the prominent points of them. Deep ravines, sometimes filled with brush, bush and windfall occur among the highest peaks, making it difficult to travel over them. Sections 11 and 12 are two good sections, with a gradual descent to the lake in section 14. This township would recommend itself more for grazing than farming purposes. Some fairly good hay lands exist on sections 20 and 32. The timber mentioned is in scattered bluffs, but is nearly all about two inches in diameter, with a few scattered trees and bluffs of poplar from 4 to 10 inches, all through the brush and windfall. The water is generally fresh, although lakes 1, 3 and 4 are slightly alkaline, which may be more pronounced in a dry season. The water course running into lake No. 4 is practically dry at present, and does not appear to have any regular supply. No water-powers, coal or lignite, stone quarries or minerals were seen. A few antelope, ducks, geese and chicken were the only game seen. Climate is apparently as good as ordinary, though short seasons prevail. Frost and showers of snow occurred in September and cold with winds.—*Henry W. Selby, D.L.S., 1903.*

Township 37.—This township is easily accessible from the east or west, but from the north or south high ranges of hills make the route more difficult, connecting at the west with a trail at present used through townships 39 and 40, ranges 6 and 7. Eyehill creek in this township is easily crossed in several places; but in many places it expands into marshy flats and muddy bottoms, but at present it has no apparent connection with Sounding lake, therefore a road can easily be made between it and Sounding lake, in sections 6 and 7, passing thence either east or west. The easterly and southerly portions of this township contain the best land, the north-westerly portion being mainly high rolling sand hills, with a thick growth of scrub poplar on them. The southerly two miles is largely composed of hay lands and alkali, bottom lands unfit for cultivation, but apparently capable of drainage and the growing of quantities of hay for ranching purposes; but the water being all more or less alkaline (except lake No. 2), is rather against it. The easterly three ranges of sections are of a better class of soil, and may be classed from 1 to 2 for farming purposes. The soil being clay loam and sandy loam on clay and sandy subsoil. Very little black loam is found, except in the depressions between the hills or around the sloughs. This surface is entirely prairie, high and rolling, with ravines running northerly and southerly from this range of hills to the valleys below, but very few are so steep that they cannot be cultivated. Timber is generally scrub poplar and thick poplar brush, unfit for anything but firewood, and occupies principally the northwest sections of the township. As before stated, some hay lands exist on the flats south of Eyehill creek, but in their present state would hardly tempt a rancher to use them, the ground being so soft, treacherous and hummocky. Eyehill creek is here an alkaline creek, as are most of the sloughs and ponds, lake No. 2 being the only water met with fit to drink. The depth of the creek is about two feet; current rapid in places and sluggish in others, its width varying from two feet to two chains; possibly in the spring freshets the flat lands south of the creek may be flooded, but not to any great extent. No water-powers were noticed, as the fall of the creek does not appear to be sufficient to allow of a rise in the water without flooding the adjacent low land. No summer frosts were observed while in this part of the country, although the blackened edges of leaves would indicate that there had been during some period of the season. Other than the scrub poplar mentioned, no fuel was observed. No stone quarries or minerals were noticed nor indications of such. A few antelope were seen and large flocks of ducks, geese and

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

plover (golden) use this and Sounding lake as a building ground.—*Henry W. Selby, D.L.S., 1903.*

Township 38.—This township is accessible from the east or west. A very good trail could be made from the west from township 40, range 6, where the present trail passes northerly west of Ribstone creek. Soil is a clay loam, sandy loam and sand on clay and sand subsoil, most of the north half being suitable for farming purposes, while the southerly half being sandy might be better suited for grazing. All the township, except parts of sections 2, 3, 10, 11, 14 and 15, is prairie, with a number of hay meadows in the undulating portions. A depression or valley is formed between high ranges of hills, which extends from section 3 through parts of 4, 9, 8, 17 and 20, in which a number of lakes and ponds lie, and a sandy plain with grassy sloughs, and good vegetation exists on sections 22, 15, 23 and 14. The north two miles is a gently undulating prairie, with good soil and vegetation, and well suited for farming. There are a few bluffs of poplar, scrub and brush, on sections 2, 3, 10, 11, 14 and 15; amongst them there are scattered trees suitable for fuel. The water is generally bad, with alkali, except in the smaller sloughs. There were no streams, water-power, stone quarries or minerals observed. There is a hay meadow on the line between sections 26 and 27 of probably 50 acres extent, with a very luxuriant growth of hay. From the appearance of vegetation there does not appear to have been any serious frost, as strawberries and raspberries have ripened and are quite abundant in places. Fuel for present use may be obtained from the poplar bluffs in this and adjoining townships to the south and southwest, but no coal or lignite seams appear within the township. No game of any kind except ducks, geese, and a few prairie chickens were seen.—*Henry W. Selby, D.L.S.*

Township 39.—It is not difficult to reach this township. After following the rancher's trail from Red Deer to township 40, range 6, it is found to be a fairly good road with few bad obstructions. The easterly half is the best for farming purposes, being sand loam soil on clay and sand, except where a large slough is found on the southerly parts of sections 13, 14 and 15. The south six sections of the west half of the township being of a similar character may be considered a fair farming land. The rest of the land is sandy loam on alkaline clay, very rolling, with numerous sloughs, ponds and lakes between the hills, very few of which contain good water. The only timber in the township is an occasional clump of poplar or willow on the bank of two or three of the lakes, but it is small and of little value. Hay lands might be cultivated, but at present there are none. The lakes and ponds with one or two exceptions are strongly impregnated with alkali. No streams or water-power exist. Climate so far good, with an occasional frosty night (June). Wood is scarce, but can be brought from some of the adjoining townships. Stone quarries and minerals were not discovered, but antelope and the tracks of elk were seen, besides plenty of ducks, geese and prairie chickens. From a general view of this township the opinion would be formed that it would make a good farming district.—*Henry W. Selby, D.L. S., 1903.*

Township 40.—A good trail known as the rancher's trail leads to and past the corner of township 40, range 6, where we crossed on a bridge over Ribstone creek to our work. No great difficulties were met with on our easterly course. Soil is generally a clay and sandy loam with a hard clay or gumbo subsoil largely impregnated with alkali. Vegetation is very poor generally, but being cut up by deep ravines and high hills makes it more suitable for ranching than farming purposes. No timber is left on this township. There are no hay lands, though in some years a little might be made around a few of the sloughs. Except for a few small sloughs with fresh water, the water is alkaline in the large lakes and ponds. There is no water-power in the township. The climate is very fair; cool up to June 1, with occasional frosty nights. No fuel was met with in this township. No stone quarries were noticed or minerals. An occasional antelope was seen. Ducks, geese and prairie chicken are in abundance.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

The township being very much broken by hills and ravines cannot be called a good one for any purpose, though a few fairly level sections could be selected if climate and soil were suitable.—*Henry W. Selby, D.L.S., 1903.*

Township 41.—The township is easily reached by trail to the crossing of Ribstone creek near the southwest corner of township 40, range 6. Soil ranges from sand and gravel to clay and sandy loam on the easterly half of the township. Vegetation is poor. The west half is totally unfit for farming purposes. It is cut by a creek bordered by large marshy banks from section 7 easterly and northerly along the central meridian, and leaving the township in section 32. The land rises easterly and westerly from the creek from 75 to 100 feet, with numerous deep ravines cutting the surface, making it generally a high, hilly and knolly township. There is no timber except one little clump of poplar in section 33. No hay lands, water-powers, fuel, stone quarries, minerals or game were seen in the township. The creek water is fairly good, and all the water met with by us in the township fit for use. A gravel pit appears to be on the north halves of sections 32 and 33. The northwesterly sections are sand and cactus the principal vegetation.—*Henry W. Selby, D.L.S., 1903.*

Township 42.—This township is very high rolling prairie on the east, and black creek, numerous muskegs, sand hills and ponds on the west make direct communication with the outside difficult. But the difficulties are easily overcome northeasterly by means of the valley of Ribstone creek, and southerly by the valley in which Black creek flows. Trails may be easily made anywhere to connect with those leading to the town. In this township at low water, Black creek may be forded at many places, but at present the high water makes it difficult to do so with safety, as the muskeg which lies on either side is too spongy and hummocky to put horses through. In section 17 my crossing (used daily) was fairly good though the water usually touched the seat of the buckboard, but the banks being hard and with an easy grade into the water, and no abrupt banks as in many places, the crossing was fairly easy to make. About 3 chains west the muskeg lies still to be crossed, and though safe enough for a few times, would soon break, as it shakes for 100 feet on either side of the vehicle being driven over it. Black creek divides the township into what may be termed good and bad parts, that part on the west and north being mainly drifting sand hills, muskegs and deep waterholes between the sand hills, filled with thick poplar willow and balm of Gilead trees, which had to be cut through, as the willow is from 10 to 30 feet high. The other portion of the township will rank from first to third-class, the best parts being the two tiers of sections on the south, and sections 15 and 22 and parts of sections 21, 16, 25 and 26. The four sections 13, 14, 23 and 24 are practically an alkaline basin filled with ponds, lakes and sloughs. The balance of the easterly portion is a mixture of sandy land, drifting sand knolls, muskegs running back from the creek and islands of good dark loam soil showing up amongst the sand knolls and it is probably better suited for ranching or grazing purposes than farming except perhaps the growing of oats or hay. Except a few scattered bluffs of poplar on sections 16, 21 and 22, there is no timber on the easterly portion, but on the westerly and northwesterly parts there are some bluffs of heavy poplar suitable for buildings or fences and fuel. Some seasons I am told by some of the ranchers considerable hay may be cut in this township, but owing to the wet summer this year it will be useless to try to make hay. No alkaline water was noticed, except that in the basin above referred to, although I have no doubt at low water Black creek, which drains several alkaline sloughs would be more or less tainted. Black creek through this township is generally sluggish until reaching the north boundary, where it narrows down between solid banks for a short distance and has a more rapid current. The width averages 25 feet and depth 2 feet. No water powers or rapids were seen. Very little summer frost has occurred so far (July). Fuel is plentiful. No coal or lignite, stone quarries or minerals of any kind were seen, and game is scarce. There is an old log building or shack with a stove in

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

it on section 17, which has, no doubt, been used by persons cutting hay for their cattle, but is at present unoccupied, though indications point to the fact of its being used in late years.—*Henry W. Selby, D.L.S., 1903.*

Township 43.—This township is accessible from the east or west without many difficulties. Leaving the ranchers trail in township 40, range 6, northeasterly a trail can be got easily by keeping to the west of the head of Black creek in township 41, range 5, and from the east, a small bridge over Black creek is its only obstacle. Black creek can be forded except at flood time in all places where the banks are hard, but it spreads out into muskegs on each side in many places. I built a bridge over it in section 1 where the stream is only 10 feet wide with good banks but $3\frac{1}{2}$ feet deep, and it only took us an hour to do it. Ribstone creek cuts off communication from the north. Its depth was taken in several places and found to be 6 to 8 feet and only in one place $3\frac{1}{2}$ feet in section 10, where we got the horses across and built a foot bridge for daily use. Its banks are almost perpendicular and it is impossible to take a loaded team across or even hitched to a vehicle. The creek is about 40 feet wide at this point and has a current of about two miles per hour. The soil is drifting sand with a few inches of vegetable matter mixed on top, giving it the sandy loam appearance. In places there is a growth of grass where the moisture remains, but on the knolls or ridges, there is very little vegetation. Exception can be made to the above for sections 35, 36, 25, 26 and parts of 34, 21, 22, 23 and 24, these being mainly black loam on clay subsoil with a heavy growth of grass and may be ranked as first-class farming land. Ridges of drifting sand cross from southwest to northwest and between them lie muskegs and deep water holes, full of dead and fallen timber and growing willows and poplar scrub, 10 to 30 feet high. The northeast portion of the township is gently rolling prairie. No large belts of poplar are found, but thick bluffs of small poplar and willow from 4 to 8 inches are scattered all over the sandy portion with light brush in spots, and heavy in other places. Hay lands are found in sections 4 and 9 and smaller pieces at different points along Ribstone creek. Water is good and fresh, owing largely to the heavy rains during the past month; no alkali was noticed. The low lands along Ribstone creek are affected by the rise and fall of the water; they extend from 2 to 60 chains from the creek, and in most places are covered with a dense growth of willows but the lands outside the muskegs would not be affected by the flooding of the creek. Although there is a rapid current, no water-power of any practical size could be maintained and made to pay. Indications (such as the turned leaf, the blackened edges of shrub leaves and the scarcity of strawberries) show that there have been frosty nights, but raspberries and gooseberries are plentiful. No fuel other than dry poplar was noticed, neither are there any minerals or stone quarriers to be seen. Plenty of tracks of deer and antelope were seen; chicken, ducks and geese are abundant. Some person has had a ranch on section 12 where the old log building and corrals are still unoccupied.—*Henry W. Selby, D.L.S., 1903.*

Township 44.—The trail mentioned in the reports upon townships 44, ranges 27 and 28, west of third meridian, and ranges 1 and 2, west of the fourth meridian, continues across this township. There is a little over one-quarter of the townships classes second, third and fourth; the rest is class one and is hard to beat anywhere, the inferior land being sand. The land is somewhat hummocky and is covered with small patches of willow and poplar. There being only a little over $5\frac{1}{2}$ miles of bush in the subdivision lines, which makes the proportion of bush to prairie as 1 to 8. There is no timber of any size whatever, though occasionally a few poplar will run to 6 inches diameter. There are several excellent hay marshes, principally in sections 19 and 21 and around the lakes. There are three lakes of fresh water Bird, Burke and Eric lakes, the rest are strongly alkaline. Settlers will have to dig for water and should get all they require at a few feet from the surface. Fuel is decidedly scarce. There are no quarries but coal probably exists but does not show at the surface anywhere within

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

the township. Game—ducks, geese and prairie chicken. There is no water-power and no land is subject to flooding. No summer frosts were noted.—*Henry de Q. Sewell, D.L.S., 1903.*

Township 45.—We made a trail from township 44, range 3 into this township. The soil is in general first and second-class. It becomes stony, however, in the southwest corner, and is alkaline and sour in the valley of Battle river. The surface is partly prairie, with a large quantity of poplar and willow in scattered clumps. It is broken toward the northeast by the deep valley of Battle river and by several deep ravines leading into it from the north and southwest. The country all rises towards the western boundary. Timber consists of scattered clumps of poplar and willow. On the slopes of the Battle river the poplar runs up to 12 inches in diameter, and on the immediate shores the willow is often 12 inches in thickness. There is no hay. Battle river furnishes a permanent supply of fresh water. It varies from 2'00 to 3'00 chs. in width, and at the time the survey was made was too deep for men or horses to ford. The banks are high so that there is no danger of flooding. It is flowing with a current of about 2 miles per hour. There are no water-powers in the township. The climate is moderate, with heavy frosts at night in September. Dead poplar is every where available for fuel. No coal was found. No stones or economic minerals were seen. Game is represented by wild duck, wild geese and prairie chicken.—*Henry De Q. Sewell, D.L.S., 1903.*

Township 46.—This township is reached via Wetaskiwin, thence east over the old telegraph trail leading to Battleford. The surface soil is a black loam 1 to 6 inches, excepting on the high places, where the material is generally clay, or gravel and clay mixed. The surface is prairie, scrub and poplar clumps very evenly scattered over the whole township. The only timber is poplar, which is small in size, none being over 6 inches in diameter. Brule exists all over the township and portions have been burnt over this year. Upland hay is generally good throughout, with a fair quantity of peavine. A little slough hay may be had by draining the northwest portion. All the water found is in sloughs and is not permanent; a few of the coulees have a little water running, which is generally alkaline. No water-power exists. Battle river flows through the southwest portion in a deep valley about a mile wide and 250 feet deep. The climate is generally cool and inclined to rain during the past summer, but generally it is reported dry. Dry poplar is the only fuel available. No stone quarries or rock exposures were seen and no minerals. Game is scarce.—*H. K. Moberly, D.L.S., 1903.*

Township 47.—The township is rolling, rough and hilly, with the exception of sections 22, 23, 24 and 13, which are large flats covered with a sparse growth of grass and alkaline soil. In the northern portion of the township and sections 1, 2, 11 and 12 there is no poplar of any account. In the southwest corner of the township from sections 3 and 10 westerly there is considerable poplar, averaging 5 inches in diameter, though it only grows in bunches of 1 to 4 acres. The water in the lakes and some of the large sloughs is strongly alkaline, and for drinking purposes the small sloughs on the hills are the only ones to be used. The lakes and sloughs have dried up considerably, as high water mark is from 3 to 4 feet above the present level, and the edges or shores after a rain are very dangerous for travelling owing to the clay (gumbo), becoming moist and having no bottom.—*H. K. Moberly, D.L.S., 1903.*

Township 48.—The township is reached from Wetaskiwin by the old telegraph trail leading to Battleford. The soil is principally gumbo and gravel suitable for chinking log houses. The township is principally prairie with small poplar in southeast portion. A small quantity of hay exists in sections 23 and 26, and there is some further west. The water is alkaline and the supply would appear to be permanent in lakes. A great deal of the land has been flooded within the last twenty years, but is now dry again. Water-power does not exist there. The climate has been wet during

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

the past summer, but it is generally reported dry. Fuel is very hard to obtain, and we saw no indication of coal or lignite. No rock exposures were noticed and no minerals. A few chickens and coyotes were seen. In the northern portion the township is open rolling prairie with alkaline sloughs and lakes. The high places have very little soil, but show exposures of washed gravel and boulders that work their way to the surface through the alkali. In the southeastern portion of sections 1, 2, 3, 11 and 12 there is a small quantity of young poplar, but at present only large enough for fence rails. The southern two miles across the township are very rough and broken by several lakes.—*H. K. Moberly, D.L.S., 1903.*

Township 49.—This township is conveniently reached by the old Edmonton and Battleford trail which crosses the township from east to west just at its south boundary. This trail is good for all loads. The soil is of excellent quality and suitable for all the purposes of agriculture. The surface is chiefly prairie with scrub and brush and a few poplar trees scattered over the township; about one acre in a hundred is scrub, brush or poplar trees. However, there is more brush than poplar. Hay areas are scattered over the township in considerable quantity. However, the ground is rich enough to grow good hay anywhere. All the lakes and other water supplies are fresh and very good. There are no large streams in the township, and none of the land is liable to be flooded. There are no valuable water-powers in the township. The climate is delightful and summer frosts are not usual. There is sufficient wood within the township to serve for fuel for many years, and when any of the proposed railways are constructed coal can be laid down cheaply from Edmonton. There are no stone quarries exposed and no valuable mineral deposits have been discovered. Game is abundant. Ducks and prairie chicken are numerous and geese, wavies, cranes, deer, bears, snipe, plover, muskrat and foxes are not uncommon.—*M. W. Hopkins, D.L.S., 1903.*

Township 50.—The Canadian Northern railway trail which passes across the township makes a very good road for any load to reach this place. The soil is of good quality and suitable for all kinds of agriculture. The surface is chiefly prairie, but there are clumps of poplar trees and scrub and brush scattered over the township in small quantities. Hay will grow in any part of the township. The water is fresh and is sufficient and permanent. None of the land is liable to be flooded, and there are no water-powers in the township. The climate is delightful and summer frosts are not usual. There is enough poplar within the limits of the township to last for many years, and as soon as any of the proposed railways are built, coal can be shipped from Edmonton. There are no stone quarries exposed yet and no valuable mineral deposits have been discovered. Game is abundant. Ducks and prairie chickens are numerous, while geese, wavies, cranes, deer, bears, foxes, muskrats, snipe and plover are common.—*M. W. Hopkins, D.L.S., 1903.*

Township 51.—This township is now reached by the very good road used by the Canadian Northern railway company in their preliminary operations. This road in the vicinity of the township is good all times of the year. The soil is very good for any kind of crop. Small clumps of coarse brush and scrub, with a few trees, are scattered all over the township so as to make up perhaps a fifth part of its area. A few poplar reach a diameter of 4 inches. The only wood is poplar and willow in about equal proportions. The ground is so rich that almost everywhere the grass makes good hay, even in the uncultivated state. The water is almost all fresh. There are no large streams or lakes in the township, but there are many small grassy ponds, containing the best of water. In the part of the year when these are dry wells no doubt would give abundance of water. No part of this township is ever flooded. There are no water-powers. The climate is fine and summer frosts are not usual. There is sufficient wood in the township for some time, and any quantity of good coal can be brought in from the Saskatchewan as soon as any of the proposed railways are built. There is, no

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 3.

doubt, plenty of stone, but no quarries have been exposed. It is not known to contain any mineral of value. Game is plentiful. Prairie chicken, ducks, geese and cranes abound, and deer are numerous. Muskrats and foxes are also in quantity. Fort Pitt, a good harbour on the Saskatchewan, is only 25 miles distant, and the proposed Canadian Northern railway passes within two or three miles of the township.—*M. W. Hopkins, D.L.S., 1903.*

Range 4.

Township 35.—A good trail from Medicine Hat has lately been made into the east side of this township, but the approach from any other direction is very difficult owing to the hilly character of the country to the east and west. The central portion of the township is taken up by the valley of Sounding creek, which also affects the south end. This valley, from one to two miles wide, is sandy, largely mixed with alkali, making it treacherous to travel over, though in many places quite safe. The soil on the high portion is clay loam on clay and mixed in many places with gravel and boulders, but the surface is so much broken by hills and ravines and the south slope of the Neutral hills as to make it unfit for farming purposes. The vegetation is fair, and should make it good for grazing or ranching, although a certain quantity of grass grows on the flats; still it cannot be termed hay land, though the grass between the hills is heavy enough in places to make hay. Sounding creek and a small creek entering the township on the south boundary of section 6, both more or less alkaline, forms the water supply. We used it for camp and it was satisfactory. This creek grows narrower and deeper and much more crooked than in township 36, range 4, and more alkaline, as the drainage from the large alkali flats to the south and west affect it more directly than it does farther north. The width is from 10 to 25 feet, and an average of 3 feet deep, with good banks. No water-power, fuel (coal or wood), stone quarries or minerals were discovered. Ducks and geese are plentiful, but no other game. Sounding creek is shown on the maps as coming north through ranges 3 and 4 from the south. The small water courses which connect the large lakes in township 33, range 3, and the flats to the north and west is not Sounding creek, nor have they at present any connection with it. Sounding creek comes into the west boundary of 6 and flows easterly and northerly. It has two branches, one flowing easterly through township 35, range 5, and one through 34, range 5, from the southwest. The small creek which strikes the south boundary of 6 is only local, and is the drainage of a flat on northeast corner of township 34, range 5, and northwest of township 34, range 4.—*Henry W. Selby, D.L.S., 1903.*

Township 36.—This township, situated on the south side of Sounding lake and on the north slope of the Neutral hills, forms a difficult proposition, though the hills near the lake are not high, still they are abrupt, and thus a trail is difficult to travel. It is broken by Sounding creek on the east, marsh and creeks at the west end of this lake, and the Neutral hills rise to a height of 400 to 500 feet on the southwest. The soil is sandy, with very little vegetation on the north half and part adjoining Sounding creek, while the high parts of the township are nearly all clay loam on clay and gravelly clay. Much of it is mixed with gravel and boulders. None of it is suitable for farming, but the valleys between the hills contain fair grass and should be suitable for grazing or ranching purposes. There is no timber, a few small poplar in sections 24 and 25 being the west end of a belt of poplar running across 36-3, too small now for any purpose, are the only trees to be seen in the township, except a few in a ravine on sections 1 and 2 on the south boundary. The rest of the township is prairie, with patches of wolf willow on the hillsides. There are small areas of hay lands in the northwest and near Sounding creek, but of very little use this year. The water in Sounding creek is fairly good, but slightly alkaline. Several sloughs of fresh water

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

were found, but the ponds are all alkaline. The creek is a very crooked stream from 35 to 40 links wide and 2 feet deep, with banks from 2 to 5 feet high; current about one and one-half miles per hour. No lands are liable to be damaged by flooding, though more or less water may be held back for a short time on the flats near Sounding lake. Climate is about the same as other parts of the northwest, though probably slightly colder this year. Small quantities of fuel may be obtained from the townships north and west of it, but no coal, minerals, stone quarries or water-powers were discovered. Large numbers of ducks and geese live on the lakes here, but no other game was seen.—*Henry W. Selby, D.L.S., 1903.*

Township 37.—Entrance to this township is easily effected from the west, but from the east is more difficult on account of the peculiar formation of the ranges of hills. A range of hills over 100 feet high, enters in sections 33 and 34 in a circular form passing through 28, 27, 22, 23 and branching in section 13 runs into township 37, range 3. At the southerly base of these hills is Sounding lake cutting off communication with the east, except by going over them. That part of the township lying northeasterly of above range of hills is a gently undulating sandy plain, more or less covered with scrub, poplar and willow. A large lake (No. 2) lies near the foot of these hills, with a heavy growth of scrub poplar between it and the hill which continues up the hillsides around to township 37, range 3, except where the line between sections 23 and 24 passes. A series of lakes are found in a depression running from the most northerly end of Sounding lake to the northwesterly part of section 32, most of which are strongly alkaline. Between these lakes and Sounding lake several smaller ranges of sand hills run east and west, getting higher towards the west. Amongst these hills some considerable scrub poplar grows in bluffs and belts mixed with thick willow in places. This township is not suitable for farming but for grazing purposes; there are patches of land on which cattle could thrive well. The only fairly good soil seen was in sections 33, 34, 27 and 28 which is sandy loam on sand subsoil. That part of the township south of Sounding lake is gently rolling sandy prairie. There are very small patches of land which might be termed hay lands adjacent to the lakes mentioned above and near Sounding lake at the northwest end. The water of Sounding lake is alkaline and very shallow. All the other lakes and ponds were more or less alkaline, except No. 3 which is not very strong as we used it while on our work. There are no streams, water-powers, quarries, minerals or game in this township, but large flocks of ducks and plover breed on Sounding lake.—*Henry W. Selby, D.L.S., 1903.*

Township 38.—This township is easy of access from the east or west on the route of an old trail and not discernible except in section 33 and in section 26, following the general direction of the high ranges of hills and connecting in township 40, range 6, with the rancher's trail to Red Deer or Lacombe. An alkaline valley with a series of lakes divides the township into almost equal parts from northwest to southeast; the land in the greater portion lying to the northeast of these lakes being classed from first to second, while that on the southwest portion is a high range of drifting sand hills from 75 to 150 feet high, with a descent both northeasterly and southwesterly and may be classed only as from third to fourth. This portion is timbered in places quite heavily with scrub poplar and is more or less covered with thick poplar and willow brush. The northeasterly portion has a high range of hills passing through it almost parallel to the sand hills and the soil improves the farther one goes from the sand hills northeasterly, and there is no timber of any kind. The soil on the latter is sandy loam to clay loam on clay and sand subsoil, and a large part of it is suitable for farming purposes. On the north half of the south half of section 3 there is the largest and best block of timber, probably 80 acres of scrub poplar from 4 to 12 inches in diameter, but only fit for firewood. There are smaller belts of poplar scattered over the sand hills but not in any large quantity. There are no hay lands except on

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

a flat between the lakes on sections 4 and 5, some of which might be rendered useful some seasons. There is a large alkaline slough on sections 35 and 36 which is a detriment to these sections of otherwise very good land. All the water met with in these ponds, lakes, and large sloughs was found to be alkaline. There is one good fresh water slough on section 22 of about 5 acres and the vegetation around it is good for grazing purposes. No water-power was seen in this township or stone quarries or minerals and the fuel required by the settlers can be obtained easily from the sand hills. No summer frosts occurred while we were there (July), but the season being a wet one, after the heat began, though dry in the earlier part, may have had something to do with it.—*Henry W. Selby, D.L.S., 1903.*

Township 39.—An old trail, formerly used apparently from Edmonton, crosses a part of this township southwesterly, but is now almost obliterated, but a fairly good trail can be found through the sand hills to the west. The soil is very changeable and is what may be termed streaked or spotted. Sections 35 and 36 and parts of 19, 20, 29 and 30 are according to the soil first class, but are too rolling to make first class farms. Two spurs of the sand hills lie on sections 33 and 34, and 17, 8 and 9, with small bluffs of poplar and willow, where the vegetation is scarce and cactus grows. A valley with large alkaline lakes, ponds and sloughs occupies the central sections of the township. Among the lakes the land is gently undulating, of fairly good quality and vegetation suitable for ranching if good water could be procured. Another valley with alkaline ponds occupies sections 6, 7 and west parts of 5 and 8. A range of hills from 100 to 150 feet high forms the west and south boundaries of the valley in the central part of the township. Deep ravines extend westerly at frequent intervals, making the westerly part rough and hilly. The easterly and southerly portions are decidedly rolling, with a few fairly good sections, level or undulating, which are decidedly high and dry. The northerly part of the township is gently undulating, with good soil, but rather sand to be first class. What timber there is is all small and scrubby. There are no hay lands in the township. With the exception of a few fresh water sloughs, the water is alkaline and unfit for use. There is no water-power. Climatic changes are very rapid, but vegetation appears to mature very quickly, as wild strawberries have been ripe here two weeks (June) although scarcely a blade of green grass was seen at the time of the snowstorm on May 18, when 12 inches of snow fell. Poplar wood for fuel can be had readily by going 4 miles west or south. I saw no indications of coal of any description, stone or minerals. Game of any kind is scarce. This township is too rough for farming, and has not enough permanent water for ranching, though that might be had by digging or sinking for it.—*Henry W. Selby, D.L.S., 1903.*

Township 40.—What is known out here as the rancher's trail passes near the corner of township 40, range 6, and thence northerly on the westerly side of Ribstone creek. My trail is no better to reach this township than could be had in other places, though probably as direct as from township 40, range 6, as can be got. Soil of the township is mainly sandy loam on clay, and sandy subsoil. The west $1\frac{1}{2}$ to 2 miles is mostly sand and sand hills. High rolling prairie extends southerly from township 41, nearly through the centre, but alkaline flats abound in the lower parts. Through the sandy knolls small poplar bluffs exist, but of small inferior quality. There are no hay lands such as deserve the term. In fact grass is poor and feed for horses scarce. Yet of course it is early in the season (June). Nearly all the ponds and lakes are more or less alkaline, though some good water can be had. No running streams were met with and no water-power. On the 5th ice formed in the cook camp $\frac{1}{2}$ -inch thick, and there have been heavy frosts other nights. There is no fuel except dry poplar. There are boulders in some of the hills, but no stone quarries to be seen. I have not discovered any minerals of value, though in numbers of the ponds, lakes and washouts, limonite and float hematite appear on the stones, which might indicate the presence of iron at some place not far distant. No game except antelope was seen. If season

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

is not too short the soil would generally be suitable for mixed farming.—*Henry W. Selby, D.L.S., 1903.*

Township 41.—Leaving the main trail to Battleford from Red Deer or Lacombe near the southwest corner of township 40, range 6, my trail runs northeasterly to the base line in range 5, and continues in the same direction to my camp near the centre of township 41, range 4. The trail is above the average in unsurveyed ground. The soil along the west boundary is sand and sandy, while the rest of the township is composed of good soil. The surface of the central and northeast portion is high and hilly and very rough prairie, more especially north of a long alkaline slough and creek. The northwest four sections and section 6 have a few small clumps of poplar willow, not of any value except for present use, firewood. There is very little of what at present might be termed hay lands, though in certain seasons there might be considerable cut on sections 17, 18, 10, 11 and 33. At present the water is high and the grass is only fairly started to grow. The water is generally good now, but it might be expected to turn alkaline later on in the season. There is a running stream leaves the township between sections 1 and 12 and drains the large slough spoken of above. It is about 50 links wide and from 2 feet to 2 feet 6 inches deep, with a current of probably 2 miles an hour. No water-power could be profitably developed. We were laid up for four days with a snowstorm, from May 17 to 20, during which time snow fell to a depth of 12 inches. Frosts have occurred frequently at night since then. Poplar in sufficient quantities for fuel can be had in townships 40 and 41, range 5, but there is no known coal east of township 38, range 14, that I have heard of. Stone quarries may exist, but I have not seen any, nor minerals of any kind. Outside of an occasional antelope, game seems to be scarce. This township, it would seem to me, is better suited for ranching purposes than any other.—*Henry W. Selby, D.L.S., 1903.*

Township 42.—This township is easily approached from east or south, the greatest obstacle being the crossing of Black creek. Sand hills of more than the ordinary character appear to obstruct the way from the northwest. With the exception of a few sections, on the east and west boundaries the soil is good ranging from first to second class nearly all over. A range of hills, one by aneroid 1,260 feet above the valley on sections 9 and 16, run through 6, 7, 8, 17 and 20, but become more on the level of the country northeasterly from them. Hills are very much broken on 6, 7, 8 and 17, making what would be otherwise good land for farming only fit for grazing purposes. The portion lying to the east and southeast of these hills is nearly a flat plain with numbers of sloughs, hay marshes, ponds and lakes, except a spur of the above hills, which breaks out on sections 3, 4, 10, 11 and 14, and parts of 1, 2 and 12, which descend rapidly to the valley mentioned above. Except for a fringe of poplar along part of east boundary and a large bluff on sections 30, 31 and 32, there is very little timber. Scattered bluffs of poplar and willow are seen on nearly every line, but are of very little value. What little timber there is, is of no value except for fuel. A small creek of good water, from 3 to 4 links wide drains the low land at the foot of the sand hills in the northwest portion, runs into lake No. 2 and passes northeasterly and out of the township at the northeast corner of section 33. Three alkaline lakes numbered 1, 2 and 3 are found in the northeast half and a fresh water lake (No. 4) lies on the west boundary. No stone quarries, coal or minerals of any kind were noticed. Game is scarce except ducks and geese and a few prairie chicken. This township is probably well suited for the purpose of ranching or grazing though a few settlers could find homes there to grow hay, oats and potatoes. No serious frosts were observed during the season.—*Henry W. Selby, D.L.S., 1903.*

Township 43.—This township can be most easily reached from the north or south, although no great obstacles are in the way in any other direction. The high ranges of sand hills in the westerly portion of the township and the thick belts of timber, slash and windfall obstructed the approach from that direction, while Ribstone creek

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

and its wide muskeg filled with willow brush obstruct the east and northwest. This can be easily overcome at the north boundary where the creek runs between dry banks. A bridge could be built at small cost, timber for the purpose being convenient. From the south was found to be the best way through the westerly part of township 41, range 4. The soil ranges from sand to sandy loam with a few places where clay comes to the surface more or less mixed with alkali. The central part is quite suitable for mixed farming, but as a whole it is more suitable for ranching or grazing. There is more or less timber in scattered bluffs all over, except in sections 34, 27, 26, 22, 23, 15, 14, 10, 11, 2 and 3, and this timber is valuable for building or fuel purposes, but is not of commercial value. When found in the largest belts, viz., on the west 2 miles and the east 1 mile south of Ribstone creek, it is generally of scrub variety from 4 to 10 inches in diameter, but occasionally a small belt was noticed fairly straight and of good size. From Ribstone creek westerly, the surface of the country rises 250 feet in 2½ miles, not with a gradual rise, but in ranges more or less broken. As the surface rises the land becomes more sandy and changes to rolling sand hills on the west side falling gradually south and west to the plain or gently undulating sandy land with large bluffs of poplar. An alkaline flat gradually rising from Ribstone creek occupies the greater part of the centre of the east half. This flat is capable of being made good use of for hay meadows and has large islands of dry land good for farming purposes. The land rises towards the south and west from this flat and should be rated as good first class land, though somewhat broken by shallow ravines, except on the north 4 miles of the west mile, there is good vegetation all over this territory, especially amongst the hills in the central portion where pea and vetches grow quite luxuriantly. Hay lands may be described as being parts of sections 11, 12, 13 and 14, and some years might have a large quantity, but this year is too wet for that purpose. Water is generally good, slightly alkaline. Only one lake was found and three or four ponds too small to traverse. Besides Ribstone creek, which crosses sections 35, 25 and 24, there are 2 small creeks 4 links wide at present. One enters from the south at the southeast corner of section 4 and continuing northeasterly through sections 3, 10, 11, 14, 13, 24 and into the Ribstone; another runs easterly from the hills, starting apparently in a muskeg on section 21 and joining the first one in the hay meadows. These probably in a dry year may only be seen at the time of heavy rainstorms. There does not appear to be any water-power, stone quarries or minerals. Granite boulders are seen on the hill tops and sides. There were very slight indications of summer frost. Large numbers of duck, geese and prairie chicken were noticed, but very few deer or antelope.—*Henry W. Selby, D.L.S., 1903.*

Township 44.—This township was reached by our own trail from the township to the north. The soil is chiefly sandy and best suited for grazing purposes. The surface is largely prairie with scattered clumps of poplar and willow throughout, comprising about one-tenth of the area. No timber fit for lumbering occurs. Hay grows abundantly along the edges of Ribstone creek, and is of good quality. A number of deserted shacks and cattle sheds indicate former Indian occupation. An extensive hay marsh comprises the greater part of sections 19 and 20 and the southern part of section 30. Fresh water is supplied by Ribstone creek, and this affords a sufficient and permanent supply. At the time the survey was made the stream was about 30 links wide, with an average depth of four feet, flowing with a current of about two miles per hour. The adjoining hay marshes were flooded this year to a depth of 15 inches. No water-powers occur. A dam on Ribstone creek would flood a large area of land. Climate was temperate and no summer frosts were noted. Wood is readily available for fuel throughout the township. No coal or lignite were seen and no stone quarries or economic minerals were found. Game, wild ducks, geese, turkeys, prairie chicken, plover and snipe. The township is crossed by the old Battleford trail, which at the time the survey was made was impassable on account of the high water in Ribstone creek. We

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

had to use our own trail, which followed to the north of the creek.—*Henry de Q. Sewell, D.L.S., 1903.*

Township 45.—We reached this township by our own trail from the township to the east. The soil is chiefly black loam on clay subsoil, and is well suited for farming. The surface is prairie with a lot of scattered clumps of poplar, which will cover about one-seventh of the whole township. There is no timber fit for lumbering. There are eight small lakes in the township with alkaline water, but sufficient drinking water may be obtained by digging holes near these lakes. There are no streams, and none of the land is liable to flood. There is no water-power. The climate is temperate with no summer frosts. No lignite or coal was seen. Wood for fuel is available for a number of years. No stone quarries or economic minerals were seen. Wild ducks, geese, prairie chicken and plover are common.—*Henry de Q. Sewell, D.L.S., 1903.*

Township 46.—This township is reached via Wetaskiwin, thence easterly over the old telegraph trail leading to Battleford. The soil consists of a black loam, generally sandy, though in some places containing clay. It is suitable for mixed farming or ranching. The surface is generally scrubby with about one-half prairie; a small quantity of large balm of Gilead grows along the banks of Battle river. Upland hay is generally distributed throughout the township between the bluffs. Slough hay is not found in large quantities, though some occurs in the northeast and northwest portions of the township. Water is generally alkaline when first appearing, though when found in creeks it seems to be much purer. The supply is permanent and the only section likely to be flooded is that extending southeasterly from the lakes to the coulee crossing the central meridian. Battle river extends through the eastern tier of sections. There is no water-power. The climate was inclined to be wet during the past summer, but generally it is reported to be dry. Small quantities of dry poplar in the eastern half are suitable for fuel. There are no stone quarries nor minerals. Game is scarce.—*H. K. Moberly, D.L.S., 1903.*

Township 47.—The township is reached via Wetaskiwin, thence easterly over the old telegraph trail leading to Battleford. It is generally suited for ranching, but a few quarter sections along the north bank of Battle river valley might be considered farming land. The north half is rolling or rough prairie country. The southern half is hilly and covered with bluffs of poplar and willow. There is no timber except a few bluffs along the edges of the river valley, and some large balm of Gilead along the river in the bottom lands. Upland hay is generally distributed and a small quantity of slough hay may be obtained in the northeast portion of the township. The water in sloughs is generally alkaline; the only permanent water is in Battle river and is good. There is no water-power. There has been much rain during the past summer, but the climate generally is reported dry. Fuel is scarce, but there is some dry poplar in places. The rock formation is generally covered with a heavy glacial deposit. No minerals were found. Game is scarce.—*H. K. Moberly, D.L.S., 1903.*

Township 48.—The route into this township is from Wetaskiwin via the telegraph trail to Battleford. The soil is generally second class and suitable principally for ranching. The country is open prairie, with the exception of the northeast corner, where a few bluffs of poplar occur. A little willow scrub appears in the northern tier of sections, but is very scattered. Poplar is found suitable for fence rails in sections 35 and 36, 25 and 26, and hay occurs, but in no large quantities except in sections 9 and 18. The water is generally alkaline. There are no springs or streams, and lakes appear permanent though shallow. No water-power is available. The climate was inclined to rain during past summer, but generally reported fine. Fuel is difficult to obtain, and there are no indications of coal or lignite. There are no stone quarries nor minerals. Game is scarce.—*H. K. Moberly, D.L.S., 1903.*

Township 49.—The Edmonton and Battleford trail crosses the township and is a good trail for any load. The soil is very good and is suitable for all kinds of farming.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

It is chiefly a black loam. The surface is chiefly rolling prairie. About one-fifth is covered with scrub and brush interspersed with poplar from 2 to 7 inches in diameter. This is chiefly in a belt about 2 miles wide, running east and west across the middle of the township. The brush is chiefly willow and the scrub is poplar. The brush, scrub and trees are in about equal quantities. There is good hay scattered here and there in all parts of the township. The water is partly fresh and partly alkaline. The supply is sufficient and permanent. There are no large streams. The land is not liable to be flooded. There are no water-powers in the township. The climate is delightful and summer frosts are not usual. There is plenty of wood for fuel within its own borders, and as soon as any of the proposed railways are constructed, coal can be supplied very cheaply from the beds near Edmonton. There are no stone quarries exposed yet. There are no valuable minerals known to exist in the township. Game is plentiful. Prairie chickens, partridge and ducks abound. Foxes, deer and muskrats are numerous and there are a great many geese and waxies.—*M. W. Hopkins, D.L.S., 1903.*

Township 50.—This township can be most conveniently reached by the Canadian Northern Railway trail which passes within a quarter of a mile of the northwest of the township and runs easterly just north of it. This is a very good trail for all loads. The soil is of excellent quality and suitable for all agricultural purposes. The surface is chiefly prairie but the two westerly tiers of sections contain some very fine poplar timber up to 7 inches in diameter, which is quite sufficient for all purposes of building and fuel for many years to come. There are some good hay areas scattered over the township, but in fact hay grows in all parts of it. The water in the three lakes traversed is alkaline, but all the hay marshes and temporary bodies of water are fresh. Kenilworth lake occupies a large part of the centre of the township. This lake with its arms extends about $2\frac{1}{2}$ miles from one stream to the other in almost any direction. The water is alkaline but can be used for all purposes. While camped on it for a week we used it for cooking and drinking. However, it is not without fault as a beverage. The land is not liable to be flooded anywhere in the township. The climate is delightful and summer frosts are not usual. There is plenty of wood in the west part of the township to serve for fuel for the township and as soon as any of the proposed railways are constructed, coal from Edmonton can be laid down cheap from the deposits along the Saskatchewan river. There are no stone quarries exposed yet and mineral deposits of any value are not known to exist in the township. Game is abundant. Ducks and prairie chicken are plentiful, while geese, waxies, partridge, deer, bears, foxes, muskrats, snipe, plover and cranes are not uncommon. Fish abound in the neighbouring river.—*M. W. Hopkins, D.L.S., 1903.*

Township 51.—This township is very easily reached by the Canadian Northern Railway trail which is good for both light and heavy loads. This trail crosses the township from east to west about one mile from the south boundary. The soil is No. 1 quality and is suitable for all kinds of agriculture. The surface is chiefly prairie, but there is considerable scrub and poplar from 2 to 7 inches in diameter in the northern end of the township. This will supply wood for fuel as well as for building purposes. There are large hay marshes in the southwest corner, extending into the township to the west and also in the valley of Vermillion river, the hay is very good and very heavy. It can usually be cut in the dry season of the year. Good hay, however, will grow in any part of the township. All the water is fresh and the supply is sufficient and permanent. Vermillion river passes through sections 31, 32, 33 and 34 flowing easterly. This river is about one chain wide and eight feet deep with a surface velocity of about one foot per second. In times of flood the whole valley of the river to the width of from 10 to 40 chains is flooded to a depth of 3 feet. The banks of the valley are about 100 feet high usually. There are no valuable water-powers in the township. The climate is delightful and summer frosts are not usual. There is plenty of wood within the limits of the township for fuel for many years. As soon as any of

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 4.

the proposed railways are constructed coal can be brought from Edmonton by rail from the deposits along the Saskatchewan. There are no stone quarries exposed and there are no valuable mineral deposits known to exist within the township. Game is abundant. Ducks and prairie chickens are very numerous, while partridges, geese, cranes, foxes, bears, deer, muskrats and wavies are common.—*M. W. Hopkins, D.L.S. 1903.*

Range 5.

Township 35.—This township is easy of access from the west by trail connecting with the rancher's trail to Lacombe or Red Deer. Soil is mainly clay loam on clay or sand, with an alkaline clay flat through the central part of the township. The easterly and southerly portions are composed of a spur of the Neutral hills, cut through near the south boundary by a branch of Sounding creek which leaves the township on section 1, after crossing and recrossing the boundary fourteen times in sections 1, 2 and 3. The surface of the westerly portion is rolling to hilly prairie; at the north slightly lower than the easterly part and descending towards the west branch of Sounding creek. There is no timber of any kind in the township. Water is nearly all alkaline. Sounding creek impregnated with alkali, has a rapid current, a tortuous course, is about a foot deep and from six to ten feet wide. A large alkaline lake lies in sections 16 and 21, which receives the drainage from the north, east and west, but has no apparent outlet. There are no minerals, stone quarries, fuel, coal or game of any kind and no water-power of any value. The township is probably better suited for grazing or ranching purposes than for farming.—*Henry W. Selby, D.L.S., 1903.*

Township 36.—Trails from the north or west are found most easily available, although quite a fairly good one can be had south of Sounding lake. Soil is a mixed one—clay, clay loam, gravelly clay, sandy loam and alkali clay in about equal proportions. The surface is very much broken by ravines and high ridges, parts of the township being 500 feet higher than the lowest portions, and the south two miles is very hilly, with scattered boulders. Some poplar and willow trees were found in sections 20, 21, 31 and 35 in deep ravines, but are of no value except for fuel. Water is all more or less alkaline, though this summer we were able to use it for cooking and drinking purposes, but in a dry season it would probably be too strong. No water-power, minerals, stone quarries, coal or lignite was found. A few rabbits and chicken were seen. This township I would judge to be admirably suited for ranching, but not for farming purposes.—*Henry W. Selby, D.L.S., 1903.*

Township 42.—This township is reached from Lacombe, Blackfalds or Red Deer by a trail which runs from any of these to Tail creek, thence easterly, keeping south of Battle river to Ribstone creek, and thence north along the west side of the creek to township 42, range 6, which is as far as the trail goes. The route is about 180 miles, and is good in dry weather but bad in a wet season. The soil is light sandy, and parts are fit for nothing, while the balance is fair grazing land. The surface is about half prairie and half scrub and poplar. In sections 17, 18, 19, 20, 29 and 30 a considerable quantity of fair-sized poplar is found, but the quality, except in the valleys, is not good, averaging only five inches in diameter. There is more or less timber spread in small bunches over the entire township, but none that I would recommend for reservation. There is no hay. Water is generally fresh and the supply in Ribstone creek and the lakes is permanent and sufficient. Ribstone creek is 25 feet wide, six feet deep, and has a current of three miles an hour. It runs through a muskeg filled for the most part with willows, and the banks are low and generally timbered. Outside of the muskeg the lands are not liable to flood. There are no falls or rapids, and there is no opportunity to develop water-power, even by the construction of dams. Frosts were observed in September, and the climate is that of northern Alberta. There is plenty

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 5.

of wood for fuel in the township, but no coal or lignite. There are no stone quarries and no economic minerals. Grouse, prairie chicken, ducks and deer are quite numerous. The township is a favourite camping and hunting ground for certain bands of Chippewa Indians, and they kill the game irrespective of seasons. I observed them on several occasions in early September riding ponies and running the deer with dogs. —*C. C. Fairchild, D.L.S., 1903.*

Township 43.—The only route to this township is by the old Battleford trail from Buffalo lake east to Ribstone creek, thence north along the creek to township 43. Ribstone creek must be crossed, but a bridge I constructed near the north boundary of section 20 washed out before I left the township. The trail from Lacombe, Red Deer or Blackfalds to Buffalo lake and thence as above east, is not bad except in a wet season. The soil on the east side of Ribstone creek is light and sandy and useless for anything except in the valleys where some very good grazing is found. West of the creek and toward the north end of the township the soil is good loam with a clay subsoil and suitable for mixed farming. The surface is generally scrubby, with numerous bluffs of poplar, averaging four inches in diameter. The best timber is found along Ribstone creek, but the greater part of it is wholly or partially fire-killed. There are good hay meadows along this creek, and in sections 33 and 34 there is probably 400 acres of good hay lands. The hay is slough grass. The water is fresh and there is a sufficient and permanent supply. Ribstone creek averages 20 feet in width, six feet in depth and has a current of three miles an hour. There are also two other small streams in the township the waters of which are exceptionally good. The hay meadows are liable to flooding to the depth of a few inches, but they are always too wet for cultivation. There are no falls or rapids, and water-power could not be profitably developed even with dams. The climate is that of northern Alberta, and frosts were common during the latter part of September. Wood is obtainable for fuel in all parts of the township, but there are no coal or lignite veins. There are no stone quarries and no minerals of economic value in the township. Prairie chicken, ducks, grouse and geese are plentiful, and a few deer were seen. The hay meadows at the north end of this township were formerly used by the Indians for wintering their cattle. There are six or eight deserted log houses and stables in and around the meadow, and I was informed by a Battleford Indian that as many as 3,000 head of stock had been fed here in one winter. —*C. C. Fairchild, D.L.S., 1903.*

Township 44.—This township was reached by the old Battleford trail, which enters the township in section 24 and crosses it about midway between the north and south boundaries. It was in only fair condition at the time the survey was made; the low-lying parts being soft on account of the very wet summer, and Ribstone creek was too deep for the horses to ford, so the camp outfit had to be carried across on a bridge. The soil is sandy around the large lake, and stony in places in the hills to the southeast, but towards the north and west the soil is chiefly loam on clay, and is well suited for farming. The surface to the southeast is hilly and broken, with much poplar and willow in scattered clumps. Towards the north and west, however, the surface is gently rolling, with scattered clumps of poplar and willow, the wooded part comprising about one-ninth of the whole. There is no timber fit for lumbering. Hay is abundant around the shore of Ribstone lake and along the course of Ribstone creek and is of good quality; a number of shacks indicate the former occupation by ranchers or Indians. An abundant supply of fresh water is found in the township. Ribstone lake and creek are only very slightly alkaline. Ribstone creek at the time the survey was made (August), was about 40 links wide, running with a current of about 2 miles per hour, and an average depth of 3 feet. During the past summer the hay marshes were partly flooded to a depth of 15 inches. No water-powers exist. A dam on Ribstone creek would flood a large area of land. Climate is temperate, with no summer frosts. Wood for fuel is readily obtainable everywhere. No coal was found, nor stone quarries or

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 5.

economic minerals. Wild ducks, geese, prairie chicken, plover and snipe are common.—*Henry De Q. Sewell, D.L.S., 1903.*

Township 48.—We reached this township by following the mail trail from township 46, range 8, as far as the crossing of Buffalo coulee by the Battleford and Edmonton trail which we followed to township 48, range 5. The roads were good except where the road passes through some sloughs in township 48, range 7. The soil is principally black loam, with a subsoil of clay, producing a good growth of bunch grass. The surface is open, rolling prairie, with Grizzly bear coulee running southeasterly through the township. This coulee is about 150 feet deep, with a small stream of good water running in it. There is some scattered scrub poplar and willow in the west portion of the township which lies west of Grizzly bear coulee. There is no timber, scrub or brush east of the coulee. Good hay may be cut from any part of the township, as the grass is very good. The only water of any consequence is in Grizzly bear coulee. It is fresh, and appears to be a permanent flow. The stream has an average width of 25 links, is 2 feet deep and has a velocity of 1 mile per hour. The surface is not liable to be flooded. There are no falls or rapids, but the stream may be diverted and power developed in that way. The climate is mild in summer and wet, with frequent rains and heavy dews. There was frost enough to form half an inch of ice in September. I do not know whether there are late frosts, but would judge by conditions that there are. Small poplar and willow in the west part of the township is the only fuel to be had. No coal or lignite veins, stone quarries or minerals were noticed. There are some deer and many ducks and prairie chicken. This township is particularly good for grazing purposes.—*R. J. Gordon, D.L.S., 1903.*

Township 49.—The best route to reach this township is by the old Edmonton and Battleford trail, which is good, and runs right across the township from the northwest to the southeast corner. The soil is first-class and is suitable for all kinds of farming. about one-eighth of the surface is covered with brush, scrub and poplar from 2 to 5 inches in diameter. This is scattered generally over the township in about equal proportions. Hay grows in all parts of the township, but more in the eastern half. It makes good feed for animals. The water is partly fresh and partly alkaline. The supply of fresh water is sufficient and permanent. There is a creek that I think never dries, running through the west half of the township from north to south. The land is not liable to be flooded. There are no water-powers in the township. The climate is good and summer frosts are not usual. There is sufficient wood to supply fuel for a long time. Cheap coal of good quality can be secured as soon as any of the many proposed railways are built. It will have to be brought from near Edmonton. There are no stone quarries exposed yet, and no valuable minerals are known. Game is plentiful. Ducks, prairie chicken, geese and cranes are numerous. Foxes and muskrats are abundant, while deer are not uncommon.—*M. W. Hopkins, D.L.S., 1903.*

Township 50.—The best way to get to this township is by way of the Canadian Northern Railway trail, which is good. The soil is first class, and is suitable for all kinds of farming. The surface is chiefly prairie. However, about one-eighth part of the ground is covered with brush, scrub and poplar from two to four inches in diameter. These are generally scattered, but the belt two miles in width running across the middle of the township from east to west is the most timbered. Hay grows in all parts of the township. The water in the north and in the south of the township is fresh, but some of the lakes in the middle belt are alkaline. The supply of fresh water is permanent. There are no large streams in the township. The land is not liable to be flooded, and there are no water-powers. The climate is good, and summer frosts are not usual. There is sufficient wood in the township to furnish fuel for a long time to come. Cheap coal can be procured near Edmonton, and can be brought in by the first railway that is constructed. There are no quarries exposed yet, and no valuable minerals were found. Game is plentiful. Ducks, geese, prairie chickens and cranes

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 5.

are numerous. Deer are not uncommon and foxes and muskrats are plentiful.—*M. W. Hopkins, D.L.S., 1903.*

Township 51.—The part of this township south of Vermillion river can be conveniently reached by means of the new Canadian Northern railway trail, which crosses section 1 in an east and west direction. The part north of the river is easily reached by the branch of the old Edmonton and Battleford trail going into Mr. George Powell's ranch. This branch leaves the main trail just before it crosses the river going south. These trails are all good for any loads. The soil of the township is very good and suitable for all kinds of agriculture. There is considerable good poplar timber scattered over the north four miles of the township. About one-fifth is poplar trees and scrub, but mostly poplar trees of from two to seven inches diameter. The south two miles of the township has very little timber in it. The southeast part contains much good hay marsh, which in dry seasons is very valuable. The valley of the Vermillion river is also a good hay marsh. All the water in the township save one lake is fresh. Vermillion river crosses sections 18, 19, 20, 21, 22, 27, 24 and 35, running in an easterly direction. It is about one chain wide and eight feet deep, but in times of flood the valley of the river is covered with water three feet deep for from 10 to 20 chains in width between the banks, which are about 100 feet high. There are no valuable water-powers in the township. The climate is delightful and summer frosts are not usual. There is plenty of wood within the borders of the township to supply fuel for a very long time. There are no stone quarries exposed yet, and no mineral deposits are known to exist in the township. Game is abundant. Ducks and prairie chickens are very plentiful and partridge, geese, wavies, cranes, deer, bears, foxes, muskrats, snipe and plover are common. Vermillion river abounds in fish. The Twin hills in sections 14 and 15 can be seen for many miles and serve as a landmark.—*M. W. Hopkins, D.L.S., 1903.*

Township 56.—(Northeast and west outlines.)—This township is broken on the east by the steep banks of Middle creek, averaging about 50 feet in height, running across sections 13 and 24, leaving a narrow gorge, the bottom of which is scarcely wide enough for the rapid stream to pass through. Thence to the northeast corner the land is broken by bluffs of small poplar and sloughs, with much intervening prairie with light scrub. Then for two miles west on the north boundary the hills are very high (325 feet or more) and very steep. In many places the sides are covered with scrub, but generally it is prairie. Along Moose creek it is still hilly and on the north boundary very scrubby. There is a nice tract of prairie on sections 29, 30 and 31, and south of these sections it becomes hilly and very much broken with muskegs and sloughs. The alluvial soil is very variable, ranging from 2 to 12 inches deep, and from black to light sandy loam. There is a good deal of poplar, spruce and jackpine over this township, suitable for building and firewood. Hay is not abundant.—*J. J. Dalton, D.T.S., 1903.*

Range 6.

Township 1.—This township is one-half rolling prairie and the other half rough and broken by numerous deep coulees running into Milk river, which flows southeastward across the northeastern part of the township. The country is very much broken along the river valley and is known as the 'Bad lands of Milk river.' Bush is found along the river valley in places and the township is well suited for stock-grazing, as the grass is of a good quality and the soil is second, third and fourth-class.—*E. J. Rainboth, D.L.S., 1902.*

Township 2.—This township is a rolling prairie broken in many places with deep coulees running into Milk river, which crosses the southwest corner of the township. It is well adapted for stock-grazing, having good grass, water and shelter. In the val-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 6.

ley of the river is found bush in places. The soil is second class, varying from sandy loam to clay loam. Many of the coulees have cut banks and have depths of from 75 to 400 feet.—*E. J. Rainboth, D.L.S., 1902.*

Township 42.—The best route for reaching the township is by the trail from Lacombe to Tail creek, thence to Redwillow creek settlement, thence keeping south of Battle river a trail runs to Ribstone creek in township 40, thence north along Ribstone creek to township 42. The trail is good except in a wet season when it is almost impassible for heavy loads. The soil is sandy for the most part, but is good enough for mixed farming. The surface is prairie with some 4-inch poplar in the centre and westerly parts and along Ribstone creek. Considerable scrub is found in most parts of the township and the surface is generally covered with light scrub which would offer little difficulty in breaking. There is enough poplar in the township to supply the wants of settlers for some years for building, fencing and firewood. There is about 80 acres of good hay land in sections 11, 12, 13 and 14 along Ribstone creek, the hay being slough grass. The water is generally fresh and the supply in Ribstone creek is permanent and sufficient. Dixon lake is, however, strongly alkaline and unfit for use. Ribstone creek averages 20 feet in width and is 6 feet deep with a current of about three miles an hour. It flows through a deep, almost impassable muskeg but outside of this no flooding occurs. Owing to this muskeg the water could not be used for power purposes. There are no falls or rapids. The climate is that of northern Alberta. No summer frosts were observed. Wood is the only fuel obtainable, but sufficient for settler's use can be obtained in the township. There are no coal or lignite veins in the township and no stone quarries. There are no economic minerals as far as ascertained. Prairie chicken, duck, geese and deer are quite abundant.—*C. C. Fairchild, D.L.S., 1903.*

Township 43.—The trail shown in this township leads south along Ribstone creek to a junction with the old Battleford trail which runs westerly between Battle and Red Deer rivers crossing Tail creek near Red Deer river. From Tail creek trails lead either to Lacombe, Red Deer or Blackfalds. The trail is good except in wet seasons. The soil for the greater part is light and sandy and is suitable for grazing only. The surface is generally scrubby, with open prairie on the southwest side, and more heavily timbered on the east side, especially around House lake, where there is some good poplar averaging 7 inches in diameter. The greater part of the rest of the timber is suitable only for fencing or firewood. The water is generally fresh, with a permanent and sufficient supply. Ribstone creek crosses the southeast corner of the township through a deep marsh. The creek follows two or more channels and a decided current was noticed in places in the marsh. It is about 30 feet wide and 6 feet deep, current 2½ miles an hour. There are no falls, rapids or water-powers available nor could power be developed by dams. The climate is the same as that of northern Alberta. Frosts were common in October, but there were no summer frosts. Wood is obtained in the township for fuel. There is no coal or lignite. There are no stone quarries and no economic minerals in the township. Duck, geese and chicken were seen in considerable numbers. The central part of the township is very sandy in places and the surface is rough and broken from the action of the wind on the sand.—*C. C. Fairchild, D.L.S., 1903.*

Township 44.—The trail followed into this township was that of some ranchers who had recently moved into township 44, range 5, from the south; it had only been used by them for a short time previously. The soil varies from dark to sandy loam, with clay or sandy subsoil, and is valuable agricultural land; the presence of wild pea vine in abundance indicates a strong soil. The surface is gently rolling throughout most of the township, with a gradual rise toward the west boundary. The greater part is prairie, with, however, scattered clumps of poplar and willow throughout. A small quantity of large poplar and whitewood 5 to 8 inches, occurs scattered around

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 6.

the shores of Parsons and Rainy lakes. The water in these lakes is alkaline, but sufficient fresh water for drinking purposes was found in the numerous small sloughs. No streams or water-powers occur. Light frosts were encountered while the survey was being made (end of August). Fuel consists of dead poplar, and is found scattered throughout the township. No rock or economic minerals are exposed. The game is prairie chicken and wild ducks.—*Henry De Q. Sewell, D.L.S., 1903.*

Township 45.—This township can be reached by trail from Wetaskiwin, via Heatherbrae and Moose creek trail, or by the government mail route from Lacombe to the junction of Iron creek and Battle river, thence northeasterly along the southerly side of Battle river to the northwest corner of the township. The trail from Wetaskiwin is now in very good condition, having been improved this season. The soil in this township is good, averaging about 6 inches of black loam, with clay subsoil; the southern and central part is rated first class and suitable for farming, the northern tier of sections is sandy soil and rated third and fourth class. The surface is undulating prairie, more rolling and hilly in the north and dotted over with willows and poplar scrub, being mostly all fire-killed last May; there are some bluffs of poplar from 4 to 6 inches in diameter on sections 2, 3, 4, 5, 6, 11, 12 and 14. The grass in this township is good, with a large quantity of good low land hay on sections 4, 5 and 6, also small hay sloughs scattered all over the township. The water is generally fresh, the only permanent supply being the Battle river, which crosses the northwest corner of section 31, and a lake on sections 25 and 36. There is no flood land, and no water-power could be developed. Weather has been wet and cold for the past few years. The first frost came on August 13 of this year. The only fuel is a limited quantity of willows and poplar on sections 2, 3, 4, 5, 6, 11, 12 and 14, with a few smaller bluffs scattered over the township. No coal or lignite, stone quarries or minerals were observed. Prairie chickens, rabbits, duck, geese and deer were seen.—*Hugh McGrandle, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail passing through township 48, range 6. The soil is mostly composed of black loam and black sandy loam resting on a subsoil of clay or sandy clay. It is suitable for cultivation. The surface is prairie and bluffs through the eastern portion of the township, the remainder being scrubby prairie and bluffs. The timber found in the bluffs scattered in the township is only fit for fuel, with the exception of a few bluffs of black poplar of a certain size bordering on Battle river that can be used for building. This timber varies from 5 to 18 inches in diameter. About one-third of the trees are rotten at the heart. Hay can be procured from the neighbourhood of the different lakes, sloughs and marshes which are situated on sections 22, 27, 29, 31, 32, 34, 35 and 36. The pasture is also very rich here. Battle river, the lakes, sloughs and ponds contain clear and fresh water. The depth of water in Battle river varies from 6 to 10 feet, with a current averaging one and a half miles an hour. This river is from 1.50 to 2.00 chains wide all along that portion situated in this township. I do not think that any water-power can be developed on this river on account of the flats bordering the river being too wide. The construction of a dam would be very expensive, and at the same time would flood miles of the best land. Fuel can be procured in large quantities all through the township. There is no stone quarry nor mineral of any description. The game consists of deer, badgers, porcupines, prairie wolves, muskrats and rabbits. Partridges and prairie chickens are plentiful here. In summer time ducks, wild geese and cranes ought to be found in large numbers also. Battle river runs in a deep valley. There are remarkable hills on both sides of the river from 200 to 500 feet in height. The country in that part presents a beautiful aspect. Roads can be made in all directions in this township with very little expense. Here as well as in township 47, range 7, and 48, range 6, settlers will find all they want to meet their requirements. The climate seems to be good, and there are no summer frosts.—*J. B. Saint Cyr, D.L.S., 1903.*

Township 48.—This township can be reached by the Battleford trail, which crosses this township on sections 11, 12, 14, 15, 16, 21, 20 and 19. The soil is composed of black

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 6.

sandy loam resting on a sandy clay subsoil. Though the township is hilly it is, with the exception of sections 22, 23 and 26, where the hills are very high and steep, suitable for farming purposes. The surface is prairie and bluffs in the eastern portion of the township, and scrubby prairie and bluffs through the western portion. These bluffs are composed of small poplar and willow, only good for fuel. There are no large bluffs. In the vicinity of the lakes are found hay marshes producing a large quantity of very good hay. These marshes are situated principally on sections 2, 3, 10, 11, 14, 28 and 29. The water is fresh in every lake, slough, pond and brook in the township. The brook and lakes draining this part of the country flows towards Grizzly Bear coulee at the northeast corner of the township. There are no water-powers. The climate is good here, there being no summer frosts to injure the crops. Wood for fuel can be procured all through the township in the different bluffs for many years to come. There are no stone quarries nor minerals of any description. The game consists of prairie wolves, badgers, porcupines, deer, rabbits and muskrats. The feathered game is the same as in the other townships of the neighbourhood. Wild geese, partridge, prairie chickens, cranes and ducks of all kinds are plentiful during the summer. This township being well situated on both sides of the Battleford trail, the main road of this country, will no doubt be settled at an early date, and will prove to be good in all respects. Settlers will find here all they want to meet their requirements. As farming and grazing land this township cannot be surpassed.—*J. B. Saint Cyr, D.L.S., 1903.*

Township 49.—This township is very conveniently reached by the Edmonton and Battleford trail, which is good for all loads. It runs east and west across the township very near its northern boundary. The soil is excellent quality and suitable for all agricultural purposes. The surface is chiefly prairie and what wood there is is mostly scrub and brush. The water is partly fresh and partly alkaline. Grizzly Bear coulee runs across the township from section 30 to section 12. The stream running in this coulee is usually about three feet deep and six feet wide and the valley through which it runs is usually four or five chains wide at the bottom and about a hundred feet deep with a very easy slope in places. The bottom of this valley is mostly a sort of marsh two or three feet deep with soft bottom in places. This stream is very good water. A lake on the south boundary of the township is fresh, while one on the east is alkaline. There is fine hay in the southern part of the township. There are no water powers. The climate is delightful and summer frosts are not usual. There are no stone quarries exposed and no valuable mineral deposits have been discovered. There is enough wood fuel for some years, and when any of the proposed railways are constructed, coal can be laid down very cheaply from Edmonton coal beds. Game is abundant. Ducks and prairie chicken are numerous and geese, wavies, cranes, deer, bears, foxes, muskrats, snipe and plover are not uncommon.—*M. W. Hopkins, D.L.S., 1903.*

Township 50.—This township is very conveniently reached by either the old Edmonton-Battleford trail or the new Canadian Northern railway trail, both of which cross the township; the former crossing the southern part of the township and the latter the northern part. These trails are both good for either light or heavy loads. The soil is of No. 1 quality and is suitable for all kinds of agriculture. Brush, scrub and small clumps of poplar cover about one-eighth of the surface. The larger part of this is scrub or brush, but there is considerable wood either for fuel or building. The greater part is in the northern part of the township. There is a very large quantity of good hay grown in the valley of Vermillion river, which can be gathered when the season is not too wet. Hay areas are scattered all over the township. There is plenty of good water in the township. A couple of the lakes are slightly alkaline, but most of the water is fresh. Vermillion river runs through the northern part of the township. In fact the northern boundary of the township lies almost wholly in the marsh through which the bed of the river winds. In times of flood this hay marsh is covered

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 6.

to a depth of 3 feet, so that the valley of the river looks like a long marsh half a mile wide in places. The river is 1 chain wide and 8 feet deep. There are no valuable water-powers in the township. The climate is delightful and summer frosts are not usual. There is sufficient wood in the township to serve for fuel for many years. There are no stone quarries exposed and no valuable mineral deposits known to exist. Game is very plentiful. Ducks abound and prairie chickens, partridges, foxes, deer, bears, geese, cranes are not uncommon. There are a great many fish in Vermillion river.—*M. W. Hopkins, D.L.S., 1903.*

Township 56.—(North, east and west outlines.)—The north boundary is very flat and for the westerly four miles very broken with marsh and sloughs. Section 25 and 36 are fit for cultivation, but south of these it is much broken with hills and muskegs. The western boundary is mostly rolling and open with light scrub and occasional thickets. Within one-half mile of the river the hills are high and rugged and along the river there appears to be a good deal of timber, such as birch, poplar and spruce in some places. There is good hay land on the north boundary of this township. The soil is deep black loam with a variable sub-soil from clay to sand.—*J. J. Dalton, D.T.S., 1903.*

Range 7.

Township 2.—This township is a hilly and broken prairie across which Milk river flows eastwards. Messrs. Spencer Brother's home ranch is located in this township, which is considered one of the best for ranching purposes, principally on account of the shelter afforded stock between the hills in the numerous coulees and along the river bottom which in many places contains clumps of bush. The grass is of a good quality and the soil is second class, varying from a sandy loam to a clay loam.—*E. J. Rainboth, D.L.S., 1902.*

Township 38.—The route to this township is by trail from either Lacombe or Blackfalds, which are the nearest railway stations. The soil is generally sandy loam with clay subsoil. The surface is open prairie, rough and hilly. There is no timber whatever. As the township had been burned over a short time before survey was made, I could not estimate the quality of the hay, but it would appear to have been fairly good and plentiful. No fresh water is to be found. The only stream is Ribstone creek which touches one section at the northwest corner. Climatic conditions are said to be unusual this year, cold and cloudy weather prevailing to an unusual extent, as also early frosts. No fuel whatever is obtainable in the township. The adjoining township to the south has some timber. There are no stone quarries and no minerals were noticed. Ducks, geese and prairie chickens were the only kinds of game seen. This land is not suitable for cultivation, being too hilly, but is well adapted for grazing or dairy purposes, providing fresh water can be had by sinking wells. There are no settlers at present in the township. —*George Edwards, D.L.S., 1903.*

Township 39.—This township is reached by trail from Lacombe station on the Calgary and Edmonton Railway. The soil in the southern part of the township is a heavy clay, almost as hard as rock. This applies particularly to the sections adjoining Ribstone creek. In the northern part of the township there is a light depth of black loam underlaid by sand or clay. The surface is open prairie, very rough, being a portion of what is known as 'The rough meadows.' The Tit hills form a prominent feature, rising to a height of 200 to 300 feet above the lesser adjacent hills. There is scarcely any timber. What there is consists of a few small clumps of poplar and willows in the northern part of the township. Hay is plentiful, but the quality is not very good. There is no fresh water. The only stream is Ribstone creek, which traverses the south part of the township from west to east. No water-powers are available. The weather conditions were unusual, wet and cold almost continuously during August and

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 7.

September. No fuel available. A supply might probably be had to some extent in the next township to the east. No building stone or quarries. No minerals. Ducks, geese and prairie chickens were plentiful at time of survey. The land is well adapted for dairy farming or grazing, but too rough for cultivation. There are no settlers in this township.—*Geo. Edwards, D.L.S., 1903.*

Township 42.—The best route to this township is from Wetaskiwin going east on a trail which goes to Stevens' ranch on Iron creek, about 4 miles from Battle river. There is no trail from this point, but Battle river could be forded at low water and thence a course south of east leads, after mounting the river bank, across a comparatively level prairie to the township. The trail is good except in a wet season. The township can also be reached from Lacombe, Red Deer or Blackfalds by crossing Tail creek and following the main route used this year by the Inspector of Surveys to Battle river at the south bend, thence on the old trail to Ribstone creek to Dixon's ranche and thence west 6 miles to the township. This latter route is much longer, and in no way better than the first, except that it avoids crossing Battle river. The southern two-thirds of the township is rolling prairie, with numerous willow sloughs and bunches of willow and other scrub, while the north part is light sand and partially covered with stunted poplar averaging 4 inches in diameter and much scrub, with water in places. The southern portion is suitable for mixed farming, while the north part is fit only for grazing and that only in the hollows. Little of the timber could be used for building or fencing, but there are a few bluffs along the north boundary which might do. The only trees seen were poplar. There is no hay except high land prairie grass. The only water is in small ponds all of which I believe dry up in some seasons. There are no streams or water-powers and no chance to develop power. The climate is the same as that of northern Alberta, with no summer frosts noted. Wood is scarce, but lying west and south along Battle river there is said to be considerable lignite probably 40 miles from the township. There is no coal or lignite in the township. There are no stone quarries and no minerals in the township. Ducks, chicken, grouse and a few deer were the game seen.—*C. C. Fairchild, D.L.S., 1903.*

Township 43.—This township is reached from Lacombe or Red Deer by the trail to Tail creek and thence along the old Battleford trail to Ribstone creek, thence north along Ribstone creek to township 42, range 6, and thence westerly into the township. The trail is good except in wet weather. The soil in the southwest half of the township is fit only for grazing and only the hollows fit for that. The northeast part of the township is better and is suitable either for grazing or mixed farming. The southwest is sandy, while the northeast is heavier, with clay subsoil in places. The surface is prairie, with considerable scrub and sloughs in the southern part. There are bunches of poplar averaging 5 inches in diameter around the lakes and sloughs in the south part of the township, but not more than would be required for use by settlers. There is no hay in the township. The water is generally fresh, except the lakes in the northeast part, which are very strongly alkaline and quite unfit for use. The supply is permanent. There are no streams and consequently no water-powers. The climate is that of northern Alberta, and I do not know whether there are any summer frosts, as I was not in the locality until October. Wood is the only fuel obtainable. There are no coal or lignite veins in the township, and no stone quarries or minerals. Ducks, geese, prairie chicken and deer were seen in the township.—*C. C. Fairchild, D.L.S., 1903.*

Township 45.—This township can be reached by trail from Wetaskiwin via Heatherbrae and Iron creek trail, or by the government mail route from Lacombe to the junction of Battle river and Iron creek, thence northeasterly along Battle river to the northwest corner of the township. The trail between Wetaskiwin and Heatherbrae is now in fine condition, having been repaired this season, and from Heatherbrae east the trail is not yet fenced, so with the exception of the two or three small creeks

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 7.

the bad places can be avoided. The soil is mostly sandy, and only fit for grazing in wet seasons. The eastern tier of sections is fine land; the surface is rolling prairie, and badly broken by ravines along Battle river. The southern tier of sections is mostly all sand hills covered with a growth of stunted poplar averaging 4 to 6 inches in diameter. There is also some poplar and willow in the ravines and along the river banks, 6 to 8 inches in diameter, but with the exception of a few small patches on the river bank it has all been killed by the fire last May. There are no sloughs to speak of except in sections 1 and 2. Battle river enters the township on the boundary of section 19, and flows in a deep ravine in a northeasterly direction through sections 17, 20, 21, 28, 27, 34, 35 and 36, and is from one and a half to two chains wide and four to six feet deep; current three to four miles per hour, and floods very little and even in freshets. The only permanent supply of fresh water is in Battle river and numerous small streams flowing into it from ravines along its course. There is an alkaline lake on the south boundary of section 2 and another in section 4. Climate cold and wet; first summer frost on August 13. The only fuel is poplar and willow, obtainable in the southern tier of sections and in ravines along the Battle river. No coal or lignite, exposed rock or minerals. Prairie chickens, duck, geese, rabbits, deer and bears are found.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—This township was reached from Wetaskiwin, Alberta, by trail passing by way of Pipestone creek, Rosenroll, Demay lake and Round hill, which is on the Battleford and Edmonton trail. We followed this trail easterly to range 13, where we took a southeasterly course to township 46, range 12. We then travelled easterly through townships 46, range 12, 11, 10, 9 and 8 to township 46, range 7. The roads were bad; many mudholes and sloughs to pass through, and in general they were very soft. The soil is black loam and sandy loam with a subsoil of clay, producing good grass and some small poplar and willow. The surface is rolling prairie, with scattered poplar scrub and willow. The prairie grasses may be cut for hay, but there are no meadow spots except in Buffalo coulee, where there is some good meadow. The grass there was about 5 feet high, being wire grass, June grass and broad leaf, with a short meadow grass. In my judgment I should say that 500 tons of hay could be cut within a distance of two miles along the bottom of the coulee. There is a small stream of good water in Buffalo coulee. Bunch grass is the principal crop outside of the coulee. The water is fresh in small ponds and sloughs, and the supply is not permanent. Battle river touches the southeasterly corner of the township and enters the east end of the township. It carries a large volume of water, being about two chains wide and six feet deep, with a velocity of two miles per hour. The surface is not liable to be flooded. There are no falls or rapids in the township, but by diverting the water into canals, at great cost, water-power might be developed. The climate is mild and wet, with heavy rains frequently, and snow in September. There were late frosts about May 20 and early ones about September 15. Small poplar and willow in the township and surrounding country is the only fuel to be had. No coal or lignite veins, stone quarries or minerals were observed. Great numbers of wild ducks and prairie chickens, some elk and deer. This township is well suited to stock-raising.—*R. J. Gordon, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail, crossing township 48, range 7. The soil generally is composed of black loam or black sandy loam, resting on a subsoil of clay or sandy clay, and is well adapted for farming. The surface is prairie, with bluffs of poplar and willow which are only fit for fuel. There is no construction timber in the township. The bluffs are scattered throughout the township. The land is hilly and broken in the vicinity of Buffalo coulee, which crosses the township in sections 30, 19, 18, 17, 16, 15, 10 and 3. In the bottom of the coulee there runs a good-sized brook. No great quantity of hay is to be found in the township, but some can be cut on sections 20, 25, 29 and 36.

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 7.

There is no water-power that could be utilized, though good water is found in almost every creek, pond, lake and slough. There are no stone quarries nor minerals of any description. Game here consists of foxes, prairie wolves, badgers, rabbits, a few deer, prairie chickens and partridges. There is only one lake of any extent in section 25, so that geese and ducks are not found in this part of the country. Considering its merits for farming, this township is one of the best I have subdivided this summer. It is rolling and undulating, and every portion of it can easily be ploughed, except Buffalo coulee. Settlers will make a judicious choice in establishing themselves here, where there is no summer frost to injure the crops.—*J. B. Saint-Cyr, D.L.S. 1903.*

Township 48.—From Wetaskiwin the old Battleford trail runs through this township, and it is a good trail in any season. The soil is black loam on a clay and sand subsoil. It is suitable for either farming or ranching. There is considerable spear grass, however, which would be injurious to a certain extent to sheep or cattle. The township consists of gently rolling prairie covered with scattered clumps of scrub and bush. There is one large bluff of green poplar running from 4 to 15 inches in diameter, covering about 400 acres, lying on sections 16 and 21, which is suitable for building timber. There is considerable hay land surrounding all the large lakes, and it is of good quality. The lakes are permanent and the water in them is fairly good. There are no water-powers. The climate is the same as Edmonton. No frosts occurred until the first of September. There is plenty of dead poplar to supply settlers with firewood for several years. There are no stone quarries and no minerals. The game consists of ducks, geese, prairie chicken and occasional deer.—*M. B. Weekes, D.L.S., 1903.*

Township 49.—This township can be reached either from Edmonton or Wetaskiwin, as good trails from these places run within two miles of the south boundary. The soil is black loam on a clay loam subsoil, and is very rich. The growth of grass is exceptionally heavy, but the land is too rough for farming, although admirably suited for ranching. The surface as a whole is hilly or broken, but none of the hills are very high. There are numerous sloughs and ponds and some lakes, and the prairie is partly covered with scrub and willows. Grizzly Bear coulee cuts off the northern part of this township. The coulee cannot be crossed by horses or cattle at any point in the township. There is a belt of timber about 12 chains wide along the south bank of the coulee, consisting of poplar and an occasional birch. A considerable amount of the poplar is dead. This timber is suitable for building purposes. Good high land hay can be cut at almost any point. There is very little slough hay. The lake in Grizzly Bear coulee contains considerable alkali, but the rest of the lakes and ponds are fresh. The water supply is permanent. There is no water-power in the township. The climate is the same as in the settled districts around Edmonton. There is plenty of dry poplar to furnish firewood for settlers for many years. It can be procured almost anywhere, but in greater abundance along Grizzly Bear coulee. There are no stone quarries and no minerals. Prairie chicken, ducks and geese abound, and there are a few deer and bears.—*M. B. Weekes, D.L.S., 1903.*

Township 50.—This township is reached from either Edmonton or Wetaskiwin. Good trails run from both places through the township. The soil is a vegetable mould on a clay, clay loam or sandy loam subsoil. This township is well adapted for mixed farming. The south half of the township is rolling or heavy rolling prairie. The north half is gently rolling prairie and is as fine a piece of country as any in the Territories. Vermilion river cuts off a small portion of the north boundary. The surface is partly covered with clean poplar scrub and some willow scrub. There is no timber large enough for building purposes, except along the south slope of Vermilion river, and in some of the coulees running in to it. There is sufficient here, however, to supply the needs of settlers. The timber is poplar and ranges in size from 6 to 12 inches in diameter. There is no low land hay in the township, but the ordinary prairie grass is sufficiently heavy to make good hay. There is a large lake on sections 14 and

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 7.

15, but the water in it is not good, being somewhat alkaline. The water in the sloughs and ponds, however, is fresh and good for drinking. The water supply is permanent. There are no water-powers. The climate is the same as in the Edmonton district. There were no frosts during the time I was in the township (July). There is considerable dead poplar scattered over the south half of the township and in the north half along Vermilion river; there is enough to last settlers for several years. There are no stone quarries and no minerals. Prairie chicken, ducks and geese are numerous. This is the best township I surveyed during the season. The proposed line of the Canadian Northern Railway runs through the middle of it. Vermilion river, in this township, is a stream about one chain wide, and is quite deep, running from 6 to 10 feet. The current is about three miles an hour. The water is fresh.—*M. B. Weekes, D.L.S., 1903.*

Township 56.—(North, east and west outlines.)—This township is very much broken with hills on the north from sections 36 to 33 by the banks of Atimoswe creek, which are from 40 to 60 feet high. Then it becomes hilly again in section 32 and on section 31 is about 300 feet above the Saskatchewan and extends both north and south. The western boundary is also hilly with numerous sloughs and knolls; towards the river they are 300 and 400 feet high by approximate barometric measurement. Soil a good depth of black and sandy loam. Poplar for fuel is abundant, but there is not much building timber. Hay is not plentiful.—*J. J. Dalton, D.T.S., 1903.*

Range 8.

Township 2.—This township is a rolling prairie across which Milk river flows in an easterly direction. It is broken by numerous deep coulees with steep banks from 75 to 300 feet deep. Although rough and broken it is well adapted for stock raising, as the grass is good and the river valley and coulees afford the necessary shelter in stormy weather. Some scattered bush is found along the river. Soil is mostly a clay loam of second quality. 'Pend d'Oreille' police post is on section 21 in the river bottom.—*E. J. Rainboth, D.L.S., 1902.*

Township 37.—This township lies a few miles south of the main trail running from Red Deer to Battleford. The soil is a good black sandy and clay loam with a clay subsoil, very dry and is ranked as second class land, only suitable for grazing purposes. The surface is mostly hilly prairie very rough and dotted thickly with ponds, swamps and lakelets. The water in the lakelets is all alkaline. The land rises in the northeasterly corner into what is called the Neutral hills some 400 feet above the plain, cut by numerous ravines. Another range of hills about 300 feet above the plains touches the southwest corner in sections 6 and 7; these are called the Nose hills. There is no timber in the township. Very little hay is found in this township. Water is very scarce. The water in the lakelets and ponds being alkaline, drinking water is only found in the ravines in the hills. Wood for fuel is found in sections 6, 7, 24, 25 and 26. No coal or lignite veins were discovered. No rapids, falls or water-powers are available. No stone quarries or minerals were found. Antelope was the only game seen.—*Joseph A. Carbert, D.L.S., 1903.*

Township 38.—The route for reaching this township is by trail from Lacombe station on the Calgary and Edmonton railway. The trail is a fairly good one on the whole, having the usual number of bad holes, through sloughs, &c. The surface is open prairie, exceedingly hilly, being part of a district known locally as 'The rough meadows.' There is no timber whatever except a straggling fringe of willows and scrub along Ribstone creek. Hay of inferior quality is plentiful. I found no fresh water whatever, all water being alkaline, and in some small lakes intensely acrid. The only stream is Ribstone creek, which traverses the township diagonally from southwest to northeast. At time of survey, its width varied from 15 to 50 feet, and depth

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 8.

from 6 to 8 feet, the water being high at the time. Current sluggish. No indication of overflowing its banks. No water-powers. Almost continuous rainy or cloudy weather prevailed at time of survey. Frosts occurred in latter part of August and through September. There is no fuel to be had in the township, the only available sources of supply being in adjoining townships, north and south, where there are scattered clumps of timber. There are no stone quarries and no minerals were observed. Ducks, geese and prairie chickens were the only game seen. This land is suitable for grazing, or dairy farming, but is unfit for grain growing, owing to the extremely rough nature of the surface. There are no settlers in this township.—*George Edwards, D.L.S., 1903.*

Township 39.—This township is reached by trail from Lacombe station on the Calgary and Edmonton Railway. The soil in west and south parts consists of a small depth of black loam with stiff clay subsoil and in other parts of township, black loam to a depth of 3 to 6 inches, with sandy subsoil. The surface is open prairie, very lilly, being another of the townships embraced in the 'rough meadows' area. There is no large timber, but the northern half of the township has numerous clumps of small poplar and willows. The poplar is not large enough for building purposes, but suitable for fencing. Hay is plentiful but of inferior quality. There are no streams in the township, and no fresh water, the only water being the small lakes and sloughs, all of which are alkaline. Climatic conditions this year are said to be unusual, cold, cloudy and rainy weather with little intermission and heavy frost in September. The only fuel available is small patches of poplar in the northern part of the township. There are no stone quarries and no minerals. The only game to be noticed was ducks, geese and prairie chickens. This land is too rough for cultivation, but suitable for grazing purposes or dairy farming. There are no settlers in this township.—*Geo. Edwards, D.L.S., 1903.*

Township 40.—The township can be reached by road from Wetaskiwin, Lacombe and Red Deer. The road is not in good condition. The soil is fairly good, principally second class. It is suitable for ranching or farming. The surface is rolling and somewhat rough. It is more or less thickly covered with bluffs of poplar suitable for firewood. Hay can be secured from numerous sloughs and from the valley of a branch of Ribstone creek which traverses the township. The water is fresh in the sloughs and in the above mentioned stream; the supply is permanent. The above stream consists of long sloughs, some of which are six and eight chains in width, where the stream is running it is about six feet in width and a foot in depth. Apart from the permanent sloughs, I do not think any of the land would be flooded. There is no water-power. The climate seems favourable and summer frosts were not observed. Poplar firewood is the only fuel. It is procured from the bluffs scattered about. No coal, stone quarries or economic minerals of any kind were observed. The various kinds of water fowl, prairie chicken and rabbits are plentiful, and there are probably also some deer.—*Thomas Drummond, D.T.S., 1903.*

Township 41.—The township can be reached by road from Wetaskiwin, Lacombe or Red Deer, but the roads are in poor condition. The soil is fairly good and is suitable either for farming or ranching. The township is prairie covered more or less thickly with scattered clumps of poplar, all of which is small. Quite a number of hay meadows are to be found and the high land grass is thick and luxuriant. The surface swamp water is fresh but the lakes are more or less alkaline. They are probably permanent. There are no streams in the township and no water-power. The climate seems suitable for farming and no summer frosts were observed. Poplar firewood can be obtained almost all over the township. No coal, stone quarries or minerals of economic value were discovered in the township. The various wild fowls, prairie chicken and rabbits are plentiful, and there are some deer also.—*Thomas Drummond, D.T.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 8.

Township 44.—This township is reached from either Wetaskiwin or Lacombe by means of good trails, but the greater part of the township lies to the east of Battle river, to reach which it would be necessary to cross the river. The soil is a light vegetable mould on sand or sandy loam subsoil, and in many places is only a few inches deep. This township is not suitable for anything except ranching, and is not very well adapted for that, as the grass is not very good. The surface consists of rolling prairie, covered more or less with scrubby poplar and scrub. The bush is scattered over the whole township, and is well distributed. The poplar ranges from 4 to 10 inches in diameter. There are some hay lands in this township, but they would only be available in a dry season. This year the water was two feet deep in the hay meadows. There is a large hay meadow on section 11, and also along Battle river. All the water in this township is fresh; the supply is permanent. There is a large lake in the northeast corner of the township, which also extends into the township to the north. Battle river is a stream about 2 chains wide and varies in depth from 6 to 10 feet. The current is about three miles an hour. The river is ten feet below the banks, so there is very little flooded land. There are two or three small rapids in the river, where the fall would be two or three feet, but outside of these there is no water-power. The climate is the same as along the railway. Several light snowfalls occurred while surveying this township (September). There is plenty of dead poplar to supply fuel for many years. It can be procured in any part of the township east of the river. There are no stone quarries and no minerals. Ducks, geese and prairie chicken abound, and bear and deer are seen occasionally.—*M. B. Weekes, D.L.S., 1903.*

Township 45.—This township can be reached from Wetaskiwin via Heatherbrae and Iron Creek trail, or by the government mail route to Iron creek and Battle river, thence northeasterly along Battle river to the southwest corner of the township. The trail between Wetaskiwin and Heatherbrae is in very bad condition, but from Wetaskiwin east the trail is not yet fenced, and with the exception of two or three small creeks the bad places can be avoided. The soil in the northeastern three-quarters of the township is generally good, averaging from 6 inches to 8 inches of black soil, with clay or sandy clay subsoil. The surface is rolling prairie, with scattered clumps or patches of willow and poplar scrub. There is some scattered poplar 4 inches to 6 inches in diameter through this portion of the township. There are no hay sloughs, but a good growth of high land grass. The township is suitable for farming and grazing. Battle river enters the township on the south boundary of section 5, running in an east or northeasterly direction through sections 5, 4, 3, 2, 11, 14, 13 and 24, which are badly broken by the river or other ravines and unfit for farming. The land southeast of the river is light and sandy and the tops of the ridges and ravines are very stony. The water in the township is generally fresh, the only permanent supply being the Battle river and numerous springs along the bottom of the river ravine and a lake on the south boundary of section 1. The river has an average width of about one and a half chains and a depth of four to six feet. Current about four miles an hour, and does not flood any land except in very high freshets. There is no water-power. Climate cold and wet. First summer frost on August 13. Fuel, small poplar and willows, scattered all through the township. No coal or lignite observed. No stone quarries and no minerals. Game, prairie chickens, ducks, geese, rabbits, deer and bear.—*Hugh McGrandle, D.L.S., 1904.*

Township 46.—We reached this township by trail from Wetaskiwin, Alberta, passing by way of Pipestone creek, Rosenroll, Demay lake and Round hill, which is on the Battleford and Edmonton trail. We followed this trail easterly till we reached township 48, range 13; here we took a southeasterly course, to township 46, range 12. We then travelled through township 46, ranges 12, 11, 10 and 9 to this township. The roads were bad, there being many mudholes and sloughs which could not be avoided. The soil is black loam and sandy loam, with a subsoil of clay. The loam is from 3 to

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 8.

18 inches deep and produces good grass and considerable poplar, scrub and willow, and would produce good cereals and vegetables if the climate were favourable to their growth. The surface is rolling prairie with scattered poplar scrub and willow distributed over the township. The timber is scrubby and scattered. There are no meadow spots, but good grass may be cut for hay on nearly any part of the township where there is no scrub. The water is fresh in shallow sloughs and ponds. The supply is not permanent. There are no streams and the surface is not liable to be flooded. There are no rapids or falls and no water-power. The climate is mild and wet, with heavy rains and dews. Very little sunshine, but no heavy winds. There were late frosts about May 20 and early ones about September 15. Small poplar and willow is the only fuel to be had. No coal or lignite veins, stone quarries or minerals were found. Wild ducks and prairie chicken are found in abundance.—*R. J. Gordon, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail, which crosses township 48, range 8, from east to west, and also by another trail from Lacombe to Iron creek, and connecting with the Battleford trail on the west side of Buffalo coulee. The township is rolling and the soil is a black sandy loam on a subsoil of sand and sandy clay. Buffalo coulee, which crosses the township on sections 33, 34, 35 and 25, is a wide and deep coulee, in the bottom of which flows a good sized brook, having a depth of three and four feet. The township is well adapted for farming. The ponds and sloughs, as well as Buffalo creek, contain good water. Hay is scarce. The poplar and willow found in the numerous bluffs scattered throughout the township can only be used for fuel. The largest bluffs are on sections 5, 6, 7 and 8. There are no water-powers. The climate is good and there is no summer frost to hurt the crops, according to the settlers residing in the neighbourhood. There are no stone quarries, and no mineral has been found here during the progress of the survey. Game is not so abundant here as in the townships north and west of this one. Prairie wolves, badgers, rabbits and a few deer have been seen, also prairie chickens, partridges and a few ducks. The land is rolling and good roads can be made in all directions, the only difficult place to cross being Buffalo coulee, the bottom of which is very soft. There is a good crossing on the Battleford trail.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 48.—This township can be reached from either Edmonton or Wetaskiwin by means of the old Battleford trail, which runs through it. This trail is good in dry weather, but is poor in the spring or after continued rain. The soil is a black vegetable mould on a clay or clay loam subsoil. The soil is very rich, but the township as a whole is too rolling for good farm land. North of the trail it is heavy rolling and hilly. The whole township is covered with clumps of poplar and willow scrub. There is no timber to speak of, except a few small patches mixed with the scrub. The only timber is poplar. Hay can be cut around any of the several hundred sloughs in this township, but not in any great quantity in one place. The hay is of good quality. The water in this township is all fresh. In a dry season nearly all the sloughs and ponds would dry up. The only permanent water in the township is the lake in Buffalo coulee. There is no water-power. The climate is the same as in Edmonton district. A few inches of snow fell on May 18 and 19, but it only stayed on the ground a few days. There is a considerable amount of dead poplar in the township. Some of it is standing, but the greater part is lying down and partly burnt. On May 13 the whole country was burnt over. The fire came from the southwest, and is said to have been started by Indians. An immense amount of destruction to prairie chickens, ducks and geese was caused by this fire, as they were hatching out their eggs at the time. There are no stone quarries or minerals. Prairie chicken, ducks and geese abound; only occasionally a deer or bear is seen.—*M. B. Weekes, D.L.S., 1903.*

Township 49.—This township can be reached from either Edmonton or Wetaskiwin by means of the old Battleford trail which runs within two miles of the south

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 8.

boundary of this township. This trail is good in the summer but is soft in the spring. The soil is a black vegetable mould on a clay and clay loam subsoil, and is very rich indeed. The country, however, is too rough to make good farming land, but is admirably suited for ranching. The surface of the township is hilly or rolling prairie with scrub and clumps of bush. There is a fine grove of poplar on section 19 and another on section 29, the timber being about 9 inches in diameter. There is also a fine poplar bush on section 13. Besides these, there are clumps of poplar suitable for building timber scattered over the township. The prairie grass at almost any point is long and heavy enough to make good hay. Besides this, slough hay can be cut around almost all the large sloughs and lakes. The water in this township is fresh; it is permanent and ample for all needs. There are no water-powers. The climate is the same as in the settled districts around Edmonton. Several inches of snow fell on May 23, but after that there were no frosts. There is a plenteous supply of dry poplar in almost every part of the township. There are no stone quarries and no minerals. Prairie chicken, ducks and geese are plentiful. Besides these I saw three black bears and two deer in the township.—*M. B. Weeks, D.L.S., 1903.*

Township 50.—This township is on the trail from either Edmonton or Wetaskiwin to Battleford, from either of which places it can easily be reached. The trail is a good one. The soil is a black vegetable mould on a clay or clay loam subsoil. There are a few sections where the subsoil is sandy loam. The north half of this township is good farming land, but the south half is somewhat too broken to make first-class farming land. The south half would be suitable for cattle. The prairie is partly covered with clumps of poplar and willow scrub, but there is no timber in the township, except along Vermilion river and in some of the coulees running into it, and even there, there is not very much poplar, and runs up to 12 inches in diameter. There is plenty of hay in the bottom lands along Vermilion river. It is of good quality and in large quantities. All the ponds and lakes in the township are fresh, except the lake in Grizzly Bear coulee which is slightly alkaline. The water supply is permanent. Vermilion river is a stream about one chain wide and from 6' to 8 feet deep with a current of three miles an hour. The water is of good quality but carries considerable sediment in it. There is no water-power. The climate is the same as in the Edmonton district. No frosts were encountered while I was in the township (July-August). Fuel is scarce but a limited supply may be had along the Vermilion. This is about the only firewood in the township. There are no stone quarries and no minerals. Prairie chicken, ducks and geese abound. No other game was seen. The north half of this township is about the same as the north half of township 50, range 7, and is the best land I saw during the summer.—*M. B. Weeks, D.L.S., 1903.*

Township 56.—(North and east outlines.)—The north boundary is very hilly, some of the hills are high and steep. The east part of the township is prairie broken with small bluffs, hills and sloughs. The western half of it is covered with scrub and the extreme western sections with poplar woods. There is a range of high hills rising on the eastern boundary just north of the Saskatchewan (300 or 400 feet high) running northwesterly past the north boundary and spreading westerly in a succession of ridges. Hay is found only on the eastern portion of this township and firewood is abundant all over. Building timber may be found on the west side and along the river. The lake at the northwest corner is apparently very deep and covers 1,200 or 1,500 acres. There is also a lake of about 160 acres near the boundary of sections 26 and 27. The soil on the eastern sections is a deep black loam averaging 9 or 10 inches, but in the northwest it becomes shallow not averaging above 3 or 4 inches. I saw no coal, lignite, stone quarries, minerals or water-powers through the foregoing townships. Game is not abundant, a few prairie chickens, wild ducks, hares and deer were seen.—*J. J. Dalton, D.T.S., 1903.*

TOWNSHIPS WEST OF THE FOURTH MERIDIAN.

Range 9.

Township 2.—This township is in part a rolling prairie, but the greater part is hilly and broken by numerous deep coulees running into Milk river, which flows eastwards across the township. The part lying south of the river is especially rough and broken by ravines or coulees extending from near Sweet Grass hills or Three Buttes lying south of the International boundary. The township is well suited for grazing purposes. A rancher is located on section 20 along the river, where bush is found in places. The soil is a clay loam of second quality.—*E. J. Rainboth, D.L.S., 1902.*

Township 38.—The main trail to Red Deer, Blackfalds, and in fact to any point on the railroad north of Red Deer, crosses the most northern sections of this township. There is also about the middle of the township a track going to Conor's ranch and east across Nose hills. This township is very hilly, mostly so on sections 9, 10, 11, 14, 15, 16. The western part contains a number of small lakes and sloughs, in which the water is alkaline, with the exception of a few small sloughs containing rain water; there is very little good water in the township. The soil is fair, being a good coat of black loam with a clay subsoil. The fuel from the timbered part of the township would not last more than a couple of years, but it is reported that coal can be procured easily. No stone quarries or minerals were found in the township. Conors & Company, ranchers, with 3,000 head of cattle, have made their headquarters on section 15 of this township. The land is good farming land, but in the middle part especially the irregularities of the surface might cause a delay of some years in the settling of the township unless a railroad happens to pass near by.—*Geo. P. Roy, D.L.S., 1903.*

Township 39.—This township can be reached by the ranchers' trail which passes through the northern row of sections of township 38, range 9. The soil is either a good sandy or black loam over a clay subsoil. This is a farming country. The western part is easy rolling prairie, with scattered bluffs of poplar. The eastern part is rough and hilly, and on sections 10 and 11 there is quite a quantity of willow brush and small poplar. The water in the lakes is alkaline; even the water in the sloughs has a taste of alkali. In a wet season hay is plentiful all over the township. There are no streams in the township. Wood for fuel would not last six months. I have seen neither stone quarries nor minerals of any kind. Ducks and prairie chicken are the only game. There are no settlers or ranchers in this township.—*Geo. P. Roy, D.L.S., 1903.*

Township 40.—The bulk of the township being south of Battle river the best route to reach the township is from Lacombe, but the trail is in bad shape. The soil is fairly good as a whole, but owing to the extremely broken character of the whole township it has been booked as class three. The hill tops are covered with boulders. The township is too rough for farming land, but the grass is excellent, and it is a good sheep country. The surface is open prairie, with scattered bluffs of poplar and willow mainly on the north side of the hills. The timber is all small, and consists of poplar, with a few scattered spruce along the valley of Battle river. The swamp water is fresh, but the permanent lakes are alkaline. The supply is plentiful and permanent. The only stream is Battle river, which runs through the northwest corner of the township. Its width is one-half to two chains and depth three to ten feet. It runs in a deep and wide valley, and only small portions of the bottom land would be flooded, and that only at extreme high water in spring. The current runs about one and a half miles per hour. There are no falls, and the fall in the rapids is very slight. I should say that water-power could not be developed by dams. The climate is pleasant, but the rainfall this season was heavy. We had cold weather, for it was late in the fall when the survey was made, but judging from the adjacent townships I should say that there were no summer frosts. Poplar is the only available fuel, and it is scattered over the whole township. Indications of coal are to be found in the cut banks of Battle river, but no actual seams were discovered. No rock in place was discovered, but numerous boulders are to be found scattered over the surface. Indications of clay iron stone were observed

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 9.

along the cut banks of Battle river, but not, I think, in sufficient quantity to be of economic value. There are a few deer along the river and vicinity, and ducks, geese, sandhill cranes, swans and prairie chickens are plentiful.—*Thomas Drummond, D.T.S., 1903.*

Township 41.—The township can be reached by road from Red Deer, Lacombe or Wetaskiwin. These roads are in bad condition. The soil is a black loam with a gravel or clay subsoil. It is booked as second class upon the whole. It is suitable, I consider, either for ranching or farming, especially the former, as the township is very much broken. The surface is rough and uneven; it is covered more or less with scattered clumps of poplar and willow. The timber is poplar suitable only for firewood, and it is practically scattered over the whole township. A limited amount of poplar building timber can be obtained along the valley of Battle river. There are many small sloughs and ponds, furnishing a limited amount of hay, but large hay meadows are scarce. The sloughs contain fresh water, but the lakes are more or less alkaline. The water, I judge, is permanent. The township is traversed by Battle river, which is from one and a half to two chains in width. It has a depth of three to ten feet and a current of about one-half to two miles per hour. Some of the bottom land in the valley is liable to be flooded to a depth of probably two feet for a short time. There are several permanent springs of good water in gulches running into the river. Water-power cannot be developed on Battle river. The climate seems suitable for farming, and no summer frosts were observed. The only available fuel is poplar timber. No minerals of economic value were observed. Wild fowl of all kinds are plentiful, as are prairie chickens, and there are also quite a number of deer.—*Thomas Drummond, D.T.S., 1903.*

Township 44.—This township can be reached from either Wetaskiwin or Lacombe; fairly good trails from both places run close to the township. The soil is a black loam on a sand or sandy loam subsoil. In the southern part the country consists chiefly of sand hills. The only purpose for which this township is adapted is ranching. The greater part of the township is hilly, but only a few of the hills are over 50 feet high. The southeast part of the township is gently rolling prairie. There is no timber in the township, except one or two small clumps of poplar around the small lakes. There is not enough, however, to supply settlers with building timber. There is considerable hay land around the lakes in the northwest part of the township. It is of good quality. There is only one lake of over 20 acres, and its waters are fresh. I have named it Delusion lake. The water in the small ponds is also fresh. With the exception of Delusion lake and one or two small lakes the water in this township is only temporary. There are no water-powers. I did not reach this township until September, but from then on we had frosts nearly every night. There is no fuel, but it can be procured from the township to the east, across Battle river. There are no stone quarries or minerals. Prairie chicken, ducks, geese, deer and foxes were seen.—*M. B. Weekes, D.L.S., 1903.*

Township 45.—This township can be reached by the route given in report of township 45, range 14, west of the fourth meridian, or by government mail route from Lacombe via depot No. 2, in township 43, range 9, west of the fourth meridian, to township 45, range 8, thence west to this township. In the two northern tiers of sections the soil is generally good, though of no great depth, consisting of an average of five inches of black soil with clay or clay loam subsoil. In the eastern and southeastern sections, comprising about one-third of the area of the township, the soil is very light, with sand subsoil, and in ordinary seasons would be worthless for farming purposes. The remainder of the township is very stony and broken. As a whole, it is only fit for grazing. The surface is generally rolling or undulating prairie, with scattered clumps of small poplar and willows, but the western half is very hilly and broken by numerous gullies and ravines, while the whole township is divided irregularly by Grattan creek coulee, which crosses it from the southwest quarter of section 30 to the northeast quar-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 9.

ter of section 13. The only timber, with the exception of some small bluffs of young poplar along Grattan creek coulee, is in the northern tier of sections, and consists of poplar from four to six inches in diameter, of which about one-third is fire-killed. A small quantity of coarse hay might be cut in Grattan creek coulee, but as a rule the bottom is too stony and boggy to allow of a mower being used; there is no upland hay. There is no permanent supply of fresh water in the township, Grattan creek and the numerous small lakes and ponds being all strongly alkaline, and three small creeks which run into Grattan creek would probably disappear in a dry season. There is no water-power. General indications are that the climate is cold and wet; the first summer frost was on August 13. The only fuel obtainable is poplar and willows, principally in the northern part of the township and Grattan creek coulee. There is no coal or lignite and no stone quarries or minerals. Prairie chickens, duck, geese and deer are to be found.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—This township was reached by trail from Wetaskiwin, Alberta, passing Pipestone creek, Rosenroll, Demay lake and Round hill on the Battleford and Edmonton trail. We followed this trail till we reached township 48, range 13. We then took a southeasterly course across the country till township 46, range 12, was reached. Then we travelled easterly through ranges 12, 11 and 10 to township 46, range 9. The roads were bad, there being many mudholes and sloughs that could not be avoided. The soil is sandy loam and produces good short grass and some scrub poplar and willow. The surface is rolling prairie with scattered poplar and willow except in the north central and northeast parts which are open prairie. The poplar is small ranging from 1 to 8 inches in diameter. The willow is small also. There is no hay, the grass being too short for that purpose. The water is fresh in shallow sloughs and the supply is not permanent. There are no streams and the surface is not liable to be flooded. There is no water-power. The climate is mild and wet, there being frequent heavy rains and dew. There were late frosts about May 20, and early ones about September 15. Scrub poplar and willow is the only fuel obtainable. They are scattered over the township and the surrounding country. There are no coal or lignite veins. No stone quarries or minerals were found. Wild ducks and prairie chicken are found in abundance. This township is good for grazing purposes and may be used for mixed farming.—*R. J. Gordon, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail which passes in township 48, range 9, or by the trail from Lacombe to Vermilion river. This last trail crosses township 47, range 8 through the centre in a northwest and southeast direction; both of them are very good. The soil is chiefly composed of black loam and sandy loam resting on a subsoil of sandy clay and is well adapted for cultivation. Settlers will make a judicious choice in taking a farm here. This township is hilly, with the exception of the south and eastern portion, which is undulating. The surface is prairie and bluffs broken here and there by ponds, hills and sloughs. The highest hills are found close to the northeast corner of the township. Good water is plentiful here and good hay is found in the numerous sloughs scattered all through the township. There are no large lakes nor streams of any description. The bluffs contain poplar and willow, fit only for fuel, but in sufficient quantity for many years to come. There is no stone quarry and no trace of mineral has been seen during the progress of the work in this township. Game consists of prairie wolf, badger, foxes, rabbits and a few deer. Prairie chickens and a few ducks, cranes and wild geese have also been seen. I have been told by settlers living northwest of here that the climate is pretty fair and that there are no summer frosts.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 48.—The township lies on the Battleford-Wetaskiwin trail and is reached from Edmonton by way of Vegreville, thence to McLeans, where the Battleford trail is joined. The eastern portion of the trail is good, while the main trail to

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 9.

Wetaskiwin is considerably cut up owing to the amount of traffic, and that between Vegreville and Edmonton is still worse. In dry seasons both would be excellent and either would make a good road if culverts were put in at the various creeks and watercourses. The soil is excellent, being generally a deep rich black loam with sand and clay subsoils, but owing to the rough nature of the surface, and the numerous ponds is for the most part suitable for grazing only. The southeast part of the township is rolling to hilly prairie with patches of willow and poplar scrub, while the balance is about half covered with poplar timber and scrub. On the west half of the township are several bunches of timber suitable for building. It is all poplar and ranges from 4 to 9 inches in diameter. Prairie fires, however, destroyed a great part of the growing trees in May of this year. There is no hay in the township worthy of note, although grass is found everywhere from 10 to 18 inches high, but the rough nature of the surface renders it useless as hay. The water is all alkaline but not sufficiently so to make it unfit for use. The creek in Buffalo coulee runs only in the spring and after a heavy rain and is not as good as water taken from many of the sloughs and ponds. Some of the ponds are deep and never dry up and plenty of water can be found at any time on all parts of the township. The land around the ponds in a wet season is liable to flooding, and many so-called lakes in a dry season dry up to a basin with one or more small ponds. There are no water-powers in the township. The climate is that of northern Alberta. A slight frost about June 15th was the only one observed after the middle of May. A little snow fell on May 19 and 20. Wood for fuel may be obtained in the township, and as far as I am aware is the only fuel obtainable. There is sufficient in the township to supply the settlers for a few years, and if properly protected from fire, for many years. There is no stone quarry in the township and no minerals, as far as I could observe. Geese, ducks and prairie chicken abound, and a few jumping deer were seen previous to the fire, but subsequently very little game of any kind was seen. The hills in the township are very abrupt and generally every depression is a slough or becomes one in a wet season. Evidence of the waters having been much higher were observed and the notes as furnished by the department on the outlines would point to the fact that the ponds are extremely low this season. However, in a few cases posts, pits, &c., built by the outline surveyor were found now under water.—*C. C. Fairchild, D.L.S., 1903.*

Township 49.—This township lies between the trails from Edmonton to Battleford, and Wetaskiwin to Battleford. The latter is generally in the better condition, but is not so much used as the former. The soil consists of heavy black loam with clay subsoil generally and would rank first class if the surface was not so broken. It is suitable for mixed farming. Buffalo coulee runs from the south boundary of section 2 northwesterly and leaves the township on the west boundary of section 30. North and east of the coulee the country is rolling with small ponds and sloughs and patches of scrub and poplar. South and west of the coulee the surface is more broken and while the hills are not over 50 feet on an average, they are very steep and the north slope usually covered with scrub. Complete field notes showing every hill and hollow on the line would be confusing and it is impossible to sketch the surface on either side of the line as there is no regularity to the hills or hollows except Buffalo coulee. There is more or less scrub and small poplar over the entire township. In the southwest corner are found some clumps large enough for building. The water is generally fresh and many of the small ponds are apparently permanent. Buffalo coulee drains south from section 21, while the water from section 20 goes northwest. There are no streams and no flooding of lands. No falls, rapids or water-power. The climate is that of northern Alberta. Frost about June 15 was the only one noticed and it did little or no damage. Wood is the only fuel and it can be obtained in limited quantities on any section in the township. There is no coal or lignite, no stone quarries and no minerals as far as I saw. Ducks, chicken, geese and an occasional deer were the only

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 9.

game seen. Probably half the surface of the township is covered with light scrub, such as buffalo willow, saskatoon bushes, rose bushes, &c.—*C. C. Fairchild, D.L.S., 1903.*

Township 50.—The old Battleford-Edmonton trail passes through the northeast part of the township, and the Canadian Northern Railway surveyors have a trail across the township which reaches Edmonton or Wetaskiwin via Vegreville. All routes are bad in a wet year and all are good in a dry season. The soil north of Birch creek is clay loam in the hollows with light sand hills, and in places blow sand. South of Birch creek and north of the south cross line is No. 1 soil and not too rough, while that south of said cross line is just as good but rather hilly. In this township is the best land I saw in any of the twelve surveyed by me. It is well adapted for farming. The surface is generally prairie, although a block of probably 40 acres of cottonwood and birch averaging 9 inches in diameter is found on sections 28 and 29. This timber is not fire-killed, being surrounded by sand hills and sloughs. The other timber in the township is small and comparatively worthless, unless it be a few clumps along Birch creek. There are good hay marshes along this creek, but this year they were all flooded. The grass is common marsh grass, and is found on sections 19, 20 and 21, in all, probably 60 acres. The water is fresh, that of Birch creek being particularly good. This creek will average 8 feet wide, 1 foot deep, with a 3-mile an hour current. The hay lands above mentioned are liable to be flooded to a depth of a few inches. A small water-power might be obtained from this creek at the north end of the township, as the banks are high and the current swift, and a dam could be constructed to give a considerable head. The climate is that of Edmonton neighbourhood. No frosts were noted while in the township (June-July). Wood is the only fuel in the township, and that is in limited quantity. Vermilion river would afford a way of bringing in more when required. There is no coal or lignite and no stone quarries. There are no minerals of economic value in the township as far as I know. Chicken and duck were seen and a few deer. The Canadian Northern Railway survey runs through the township, and one squatter was found on the northeast quarter of section 36.—*C. C. Fairchild, D.L.S., 1903.*

Township 51.—The route for reaching this township is by a trail from Whitford lake or by a new trail along the surveyed line of railway from Sickman hill and Vegreville. This trail is fairly good as far as Vegreville, but from there to Edmonton it is very bad. The trail by Whitford lake is good as far as Whitford post office, but from there to Edmonton it is very bad. The nature of the soil is a black loam from 2 to 15 inches in depth, with a subsoil of clay in places and sand and gravel. I do not think the subsoil is first class. The soil supports a heavy growth of prairie grass, very suitable for cattle, and if broken up and cultivated would grow good crops of grain and roots. The surface of this township might be called prairie, timbered and scrubby, as prairie timber and scrub can be found on almost every section; it is rolling, and in places hilly. The south side of Vermilion river is more open than the part lying to the north. To the north the land is more hilly and rough, with a heavier growth of poplar and scrub. The valley along the Vermilion is the best location for hay in dry seasons; two tons and over per acre could be cut when the summer is suitable and dry. The quality is slough or wild grass. The water found in all the ponds, lakes and sloughs was good; there is surface water from rain and snow. The Vermilion river water cannot be called good, as it is slightly alkaline. The climate is identical with that of Edmonton; no summer frosts from June 1 to August 30, 1903. The kind of fuel most readily available is poplar, which can be found scattered all over the township. No stone quarries were found, but boulders can be found on some of the hills and in the beds of creeks. I found no minerals of economic value in the township. The game to be found is rabbits, prairie chicken, and in the summer time ducks and geese are numerous. Poplar timber can be found in size up to 12 inches on the northeast quarter

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 9.

section 36. Brulé and windfalls on southeast quarter section 24; poplar on southeast quarter section 5. On sections 11, 12, 13, 26, 27, 33, 34, 30 and 19 poplar can be found from 4 to 8 inches.—*Robert W. Lendrum, D.L.S., 1903.*

Township 52.—The best route for reaching this township is by a trail from Whitford lake. It is fairly good in dry weather. The soil is from two inches to fifteen inches in depth, a black loam with a clay subsoil in the north, and a sand and gravel subsoil in the south. The surface to the north and east is rough and hilly, and in places broken; to the south it is high rolling. There is a large lake on the township boundary on sections 13 and 24 and another on sections 26 and 27, both of which I traversed. This township is suitable for mixed farming, the land to the south and west is prairie, with some scrub and brush; to the north and east the scrub is thicker; poplar trees in clumps and scattered on almost every section. Hay can be cut in small quantities around the sloughs and lakes; no meadows of any great extent were found except on the flats immediately along Vermilion river. Water is plentiful and that found in the creeks, lakes and ponds, good and I believe the supply permanent. No water-powers were found. The climate is almost the same as around Edmonton; no summer frosts between May 20 and August 23. The kind of fuel most readily available is poplar wood, which can be had on every section. The game found here is prairie chicken, ducks and geese. No rock was found but boulders can be got on almost every hill top.—*R. W. Lendrum, D.L.S., 1903.*

Township 57.—This township lies a few miles south of the main trail from Red Deer to Battleford and can be easily reached. The soil is mostly a black sandy loam from 6 to 15 inches in depth and ranks as first class. The soil in the northeastern corner is a hard clay in a plateau through which Ribstone creek runs, and is only ranked as third class land. Part of the surface is heavy rolling prairie very rough and uneven, rising into very high hills called Nose hills, and cut by numerous deep ravines, well wooded. The timber is poplar and balm of Gilead 6 to 10 inches in diameter and is only suitable for light building purposes for fuel. Good hay is found at the foot of the ravines. The grass is very long and abundant. Water is scarce, the Ribstone being the only water supply in the township. Plenty of timber for fuel purposes is found in the numerous wooded ravines. No evidences of coal or lignite veins were discovered. There are no waterfalls or rapids in the township. No minerals or stone quarries were found. Antelope were the only game noticed.—*Joseph A. Carbert, D.L.S., 1903.*

Range 10.

Township 2.—This township is well watered by Milk river which flows eastwards across the northern part and is more or less broken by coulees running into Milk river along the valley of which and in the numerous coulees there is good shelter for stock. The township is best suited for ranching. The quality of the grass is good and the soil is from second to third class.—*E. J. Rainboth, D.L.S., 1903.*

Township 37.—This township lies only a few miles south of the main trail running from Red Deer to Battleford. The soil is a rich black clay loam with a clay subsoil, and with the exception of a few sections of second class land, is all first class. Vegetation is rich. The surface is open rolling prairie in the westerly half and hilly in the easterly portion. There is no timber whatever in the township. A limited quantity of hay is found around the hay sloughs. Good water is scarce. Fair water is found in the grassy sloughs and in a stream which runs easterly through the township and enters Ribstone creek at the foot of the Nose hills. There are no waterfalls or rapids in the township. Wood for fuel is very scarce, but can be had in the adjoining township east in the Nose hills. No coal or lignite veins were found, and no minerals or stone quarries. Antelope from the Nose hills were the only game seen.—*Joseph A. Carbert, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 10.

Township 38.—The rancher's trail to Blackfalds or points on the railway north of Red Deer crosses the northern part of this township. The surface is mostly easy rolling, with a slope to the south. It contains a fair amount of small poplar and brush in the north half. The soil is a sandy or black loam on a clay subsoil. There are not a great many sloughs in the township except in the south part, and hay would be scarce in dry seasons. The water in the small lakes in the township is alkaline, but is fresh in most of the sloughs. There are no streams in the township. Fuel is scarce as far as I could judge. I know of no stone quarries, nor did I see any kind of minerals. Prairie chicken and duck are the only game, with geese in the fall.—*Geo. P. Roy, D.L.S., 1903.*

Township 41.—The township can be reached by road from Wetaskiwin, Lacombe or Red Deer, but the road is not in good order. The soil is fairly good upon the whole, but the township is much broken by hills, ravines and by the valley of Battle river. It is suitable for ranching. The township is prairie, more or less covered with scattered clumps of poplar and willow. The timber is poplar, which is small, except along the river valley, where a limited amount of building timber can be obtained. The township is cut up by wide coulees which contain lakes and swamps, affording a fair growth of good hay. The lakes are more or less alkaline, good for stock but not for man. They are permanent. There are several good springs in ravines running into Battle river. Battle river itself affords a never failing supply of good water. It is one and a half to two chains in width and three to ten feet deep, and has a current of about one and a half miles an hour. Some of the low flats along the river valley would be flooded to a depth of about one foot. The river does not afford any available water-power. Poplar firewood can be obtained from the bluffs scattered over the township. No coal seams were located, nor were any economic minerals or stone quarries observed. Wild fowl and prairie chickens are plentiful, also rabbits, and quite a number of deer were also seen.—*Thomas Drummond, D.T.S., 1903.*

Township 45.—This township can be reached by the route given in the report for township 45, range 11, west of the fourth meridian. In the west and centre the soil is black loam with clay or clay loam subsoil. In the eastern part there is a great deal of stone and the subsoil is gravelly. There are occasional quarter sections suitable for mixed farming, but the greater part is only fit for grazing. The surface is principally prairie, with scattered bluffs of poplar and willows, and is very rolling, and broken by numerous ravines and gullies. The only timber consists of poplar 2 inches to 4 inches in diameter, and willows occurring in scattered bluffs along the south sides of ravines, principally in the north half of the township. There are occasional trees from 8 to 10 inches in diameter in the northern portion. There is a hay slough of about 10 acres in extent in section 34, one of half the size in section 32, and there are also a number of small sloughs where coarse hay could be cut in dry seasons. There is no permanent supply of good water; the numerous small ponds and lakes are strongly alkaline. Two small springs were found on section 10 and one in section 11, but the water was bad. Owing to the abundant rainfall there is plenty of fresh water to be had in the sloughs, but in a dry season there would be none. There are no streams in this township. The climate is cold and wet, but no frosts so far (July). The only fuel is poplar and willow. No coal or lignite was found, or stone quarries or minerals. Prairie chicken, duck and rabbits are found.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—We reached this township by way of Wetaskiwin, thence by trail, passing Pipestone creek, Rosenroll, Stony creek and Round hill, on the Battleford and Edmonton trail in township 45. We followed this trail to range 13. We then travelled southeasterly to township 46, range 12, thence easterly through township 46, ranges 12 and 11, to range 10. The roads were very bad, as the trail crosses many sloughs which cannot be avoided. The soil is black loam from six inches to two feet deep, with a subsoil of clay, producing a good growth of prairie grass. The surface is rolling to

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 10.

hilly prairie with willows and small poplar scattered throughout the township. There is none large enough for building purposes. Good hay may be cut from the north central part of the township in the vicinity of Craven lake, where the surface is undulating and small willow is the only brush. There is good hay in other parts, but the scrub is thicker and the surface rougher. There is some blue grass, but bunch grass predominates. There are many fresh water ponds, supplied by the almost constant rainfall. Surface wells may be obtained. There are no streams, and the surface is not liable to be flooded. The climate is mild in temperature and very wet, as it rains nearly every day and the dew is heavy. There were late frosts about May 25 and early ones about September 20. The only fuel to be had is small poplar and willow, scattered over the township. There were no indications of coal or lignite. No quarries or minerals were discovered. Ducks, geese and prairie chickens exist in abundance. This township is best suited for stock-raising.—*R. J. Gordon, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail, passing some four miles north of the south boundary of township 48, range 11. The soil is composed of black loam, varying in depth from 4 to 18 inches, resting on a subsoil of sandy clay and hard clay. Though the soil is a little stony in some places, it can be cultivated profitably. This township is somewhat hilly here and there. There are three remarkable hills in the central portion of this township, the north slopes of which are covered with poplar and willows. The poplar and willow bluffs contain wood that is only good for fuel. Good hay is plentiful in every slough and marsh. Grass grows abundantly on the side hills. Good water can be had in nearly every pond and slough. There is no stream of any description in this township, no stone quarries, and I did not see any traces of mineral during the progress of the work. There are only three lakes of any size in the township, viz.: Markus lake, lake No. 1 and lake No. 2. Prairie wolves, foxes, badgers and rabbits seem to be plentiful here. As to the feathered game, there are ducks of different kinds, wild geese, cranes, prairie chickens and partridges. Roads can be made with comparatively little cost in all directions through this township. Settlers will find here everything to meet their requirements.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 48.—The township is intersected by the Battleford-Wetaskiwin trail, which is good in a dry season, but becomes almost impassable in a wet season. Edmonton is reached by way of Vegreville and Fort Saskatchewan, but this trail is both longer and worse than the Wetaskiwin trail. The soil is generally a heavy black loam with a clay subsoil, and would rank as No. 1 for agricultural purposes were it not for the hilly nature of the country and the numerous ponds. On this account I have graded it as No. 2 for the greater part. It is, however, especially adapted for grazing, the rolling surface and small patches of scrub and brush giving protection to stock. The timber or bush in the township is generally small, and with the exception of the east one-third of the township, there is practically no timber, and that in the eastern part of the township is small, averaging four inches in diameter, and being found in small patches without any continuity. To sketch the landscape is a practical impossibility, as the hollows are so deep and irregular that only a small area is visible from any one point. There is no hay land in the township, but this season an excellent crop of hay, pea vine, &c., could be cut on the hills, but the area would be limited by the small scrub, ponds, &c. The only water in the township is in the ponds, and any of these that are apparently permanent are more or less alkaline. There are no streams, falls or rapids. The ponds at the time of survey were very full, but flooding from them affects only a small area. The climate is the northern Alberta climate. A snow-fall on May 19 and 20 and a slight frost on June 15 were the only unpleasant features noted. Wood is the only fuel available, and it can be obtained in small quantities generally throughout the neighbourhood. There is no coal in the township, no stone quarries, and no minerals as far as I could ascertain. Chicken, duck and a few geese

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 10.

were seen in the township. The prairie fire early in May destroyed a considerable quantity of bush in the township, as well as the nests of the chicken and duck. In fact, very few chicken survived the fire and thousands of eggs must have been burnt. There are no squatters in the township.—*C. C. Fairchild, D.L.S., 1903.*

Township 49.—The township lies between the Battleford-Edmonton and the Battleford-Wetaskiwin trails and is reached from either trail without difficulty. The trail from Wetaskiwin is the better of the two, but both are good in a dry year, but almost impassable in a wet year. The soil is a heavy black loam with clay subsoil, but owing to the broken surface and prevalence of ponds, is better suited for grazing than farming. The surface is prairie with some scrub, which is thicker along the east side where some 4-inch poplar is found. Very little of this, however, would do for building. There is no hay in the township except the prairie grass which grows luxuriantly on all parts of the township not covered with scrub or water. The water in the lakes and ponds is good. There are no creeks and no flooding of lands or water-powers. The climate is similar to that of Edmonton. There was one light frost in June. Wood is the only fuel and it is found in small quantities on all the surrounding prairie. There are no coal veins, stone quarries or minerals. Prairie chicken, ducks and geese were the only game seen. The lakes and ponds were very high at the time of survey and several ponds shown in field notes would doubtless dry up in a dry year, but a number of the ponds are, I believe, permanent. There are no settlers in the township.—*C. C. Fairchild, D.L.S., 1903.*

Township 50.—This township is reached either from Edmonton or Strathcona or Wetaskiwin by way of Vegreville. The Canadian Northern Railway surveyors have a supply trail from Vegreville to the township, which is good. The soil is somewhat sandy in the centre but is better both north and south. It is suitable for mixed farming but is rated generally No. 2 for this purpose. The surface is rolling prairie with scrub. The north and south ends are rather scrubby, the north being about half covered with poplar and willow scrub averaging 12 feet in height. There is little growing timber in the township, but considerable brulé scattered through the scrub. Hay can be cut in limited quantities along the valley of Birch creek. There is an abundant supply of excellent water both in the lakes and Birch creek. Birch creek is about 6 feet wide by 2 feet deep, and flows for the most part through a flat marshy valley. The current is about three miles an hour. The marshes are liable to flooding, but are apparently never dry, and the effect would be hardly noticeable. There is no chance for water-power development. There are no summer frosts, the climate being that of Edmonton district. Dry poplar is the only fuel available, there being enough within the township for settlers' needs for a few years. There are no coal or lignite veins in the township and no stone quarries. No economic minerals were found. Chicken, ducks and a few deer were seen in the township. Birch creek enters the township near the northwest corner and flows out about the centre of the east side. A Canadian Northern Railway line is located south of and generally parallel to the creek and there is a trail running alongside the survey line. There are no settlers in the township and no stock ranging over it.—*C. C. Fairchild, D.L.S., 1903.*

Township 51.—The route to this township is from Edmonton to Fort Saskatchewan, thence to Vegreville and from there by trail to this township. The trail from Fort Saskatchewan to Vegreville is very badly cut up. From Vegreville to this township, it is fairly good, along the trail made by the Canadian Pacific Railway surveyors. The soil is a sandy loam from one to eighteen inches in depth. In the north part of the township, the subsoil is clay or sandy clay, in the south part the subsoil is sand or gravel. The surface is high rolling or hilly in the east and southwest portions and rolling and swampy towards the middle, covered with willow and poplar scrub and brush, with occasional openings or bare prairie. On sections 19, 29, 30, 31 and 32, there are poplar trees averaging about five inches, suitable for building and fences.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 10.

Hay is found around sloughs on sections 14, 15, 18, 19, 20, 22 and 29, and consists of slough grass, the quantity is very uncertain, varying as the year is wet or dry. The water found in the sloughs and ponds was fairly good, but a little alkaline. The supply in wet seasons is abundant, but I am inclined to think that in dry seasons, the supply of surface water would be limited. There would be no great difficulty in getting water by means of wells in most places. I did not discover any water-powers. The climatic conditions of this township are almost similar to those of Edmonton or Strathcona. I could discover no difference. Snow fell to the depth of six inches on the 21st day of May, 1903, and snow to the depth of four inches on October 2, but both these snows disappeared in the course of one day and there was fine weather afterwards. A killing frost came on the 25th day of August, killing off potatoes, oats, wheat, &c. The fuel most readily available is poplar, which can be found on almost every section. The supply would be sufficient for a few years only. There is a vein of lignite on the north side of Vermilion river on section 7. There are no stone quarries to be found in this township, but boulders are to be found on many of the hill tops. The kinds of game found were prairie chickens, partridges and ducks and a few rabbits.—*R. W. Lendrum, D.L.S., 1903.*

Township 52.—The surface of this township is rough and hilly and in places broken, overgrown with willow and poplar scrub and brush, with openings here and there. The route for reaching it is by Vegreville, thence across the country by Sickman hill to the north of Birch lake, to Birch creek across a muskeg at Birch creek, which is dangerous for teams, to township 51, range 10. The soil is a black loam on a clay subsoil. The surface soil is from three to fifteen inches in depth. The township is more suitable for grazing purposes than cultivation on account of its hilly and broken surface. There are two groves of spruce trees, one on sections 13 and 14 and another on sections 22 and 23; trees from 6 to 18 inches in diameter, suitable for sawn lumber; I estimate about three hundred thousand feet board measure in all of spruce. There is an abundance of poplar trees in groves and scattered, suitable for building purposes, fencing and fuel. Hay can be cut in small quantities in many of the sloughs. I discovered no extensive meadows. The water in this township I consider amply sufficient, and I found it good and sweet, and I think permanent. Vermilion river enters this township on section 34, crosses sections 27, 26, 23, 24, and leaves it on section 13. It is a stream of from 80 to 100 links in width while in full flow, and a depth of from 6 to 8 feet, with a current of about 2 miles an hour. I found the water to be good. This is a very crooked stream, and along the bends and turns are flats where hay can be cut. Upon this stream I discovered no rapids suitable for mill dams. The climate I consider similar to that of Edmonton district. The fuel most readily available is poplar, which can be procured in every section. I found rock in place on the east boundary of section 14; it is a red sandstone, and boulders can be found on almost every hill. A thin bed or vein of lignite is exposed on the bank of the Vermilion on sections 13 and 18. The game to be found is ducks, prairie chicken and rabbits.—*R. W. Lendrum, D.L.S., 1903.*

Range 11.

Township 2.—This township is well watered by Milk river, and there is also a creek emptying into the latter and flowing through Deadhorse coulee, which is also called the Old river bed coulee. The river flows across the middle of the township eastwards. Along the river there is good shelter for stock grazing, for which the country is best suited. The grass is of an excellent quality, and the soil is second class.—*E. J. Rainboth, D.L.S., 1902.*

Township 38.—This township is easily reached, as the main trail from Red Deer to Battleford passes through the township from west to east. The soil in the upper

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 11.

one-third of township is a black sandy loam with a clay subsoil, and is first class land, good for farming purposes. The lower two-thirds is a much poorer quality; some black loam mixed with alkali, and balance sandy, and is only fit for grazing purposes, being third class. The surface is open rolling prairie in the upper one-third, and a low flat prairie in the lower two-thirds of the township, and there is no timber whatever. There is an abundance of good hay to be found around the lake which is situated in the lower two-thirds of the township, and in the hay sloughs. Water is scarce, and is found only in the sloughs, and in a stream which runs from Meadow lake northerly in Battle river. The water in Meadow lake is alkaline, and is from 1 to 6 feet deep. There are no water-powers, falls or rapids in the township, and no wood for fuel, but wood can be obtained in the township north along Battle river. No lignite or coal veins were discovered. No stone quarries or minerals were found in the township.—*Joseph A. Carbert, D.L.S., 1903.*

Township 40.—The best way to reach the township is by a road along the north of Battle river. The road is not in good order. The soil is first and second class, consisting generally of sandy loam with clay or sand subsoil. It is suitable for stock-raising or farming. The surface is more or less covered with scattered bluffs of poplar and willows, and there is also a considerable amount of scrub, especially in the northern part of the township. The south is more open. There is only small poplar, and that in limited quantities. There are very few hay meadows of any importance in this township. There are no streams, but quite a number of large lakes, in which the water is more or less alkaline, and, while good enough for cattle, is not sufficiently pure for domestic use. The land is not liable to be flooded. A large muskeg to the south has fresh water, and in the smaller swamps the water is also good. There is one small brook in a coulee at the north of the township in which the water is also sweet. There are no water-powers in the township. No summer frosts were observed and the climate seems suitable for farming. Poplar fuel can be obtained from Battle river within a reasonable distance. No coal, stone or economic minerals were observed. Prairie chickens, ducks, geese, sandhill cranes and swans are plentiful. There are also a few deer.—*Thomas Drummond, D.T.S., 1903.*

Township 41.—This township is comparatively easy of access by wagon trail from Wetaskiwin, the nearest station on the Calgary and Edmonton Railway and about 110 miles distant therefrom. Up to within about 25 miles a number of settlers are located along the trail, and unless the season is very wet, very fair loads can be hauled over it, as most of the creek crossings are bridged and the hills graded. Probably the worst place is the crossing of a boggy marsh on section 25 in township 41, range 13. The nature of the soil in the southerly two tiers of sections averages about first class although they are very much cut up by ponds and marshes generally surrounded by a dense growth of willows. A group of hills covers about one-third of the township. Coming from the south the hills present an abrupt ascent up to a height varying from 100 to 150 feet, the highest point being on the northeast quarter of section 17, where it is almost 200 feet high, and is known as 'Flagstaff hill.' To the north the descent is very gradual, and the foot, therefore, almost difficult to define. Several ravines also traverse the easterly portion of the township, which, although the banks thereof are not very steep, yet cut the land too much for proper cultivation. The valleys at the bottom of these ravines contain many ponds and marshes, frequently strongly impregnated with alkali, which is more particularly the case to the north. The southerly half of the township is fairly well wooded with poplar up to 10 inches in diameter, much of which, however, is fire-killed. The wooded portion of the township will probably not average more than 15 per cent of the whole. There is good grazing for cattle and horses in the hills, which when once ascended form more of a plateau, cut by ravines, then a range of hills, with a gradual descent to the north. The easterly tier of sections, where not traversed by ravines, may also be rated at first class.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 11.

The northerly half of the township consists principally of open prairie interspersed with numerous alkaline ponds. Owing to excessive rains this year and for several seasons past, there are no available hay meadows, and upland hay has to be cut, which, although not in such quantities as in low lands, is said to be more nutritious than that cut in the latter which is of a much coarser fibre. Altogether I may say that this township is better adapted for pasturing cattle than for the raising of cereals. Water this season is plentiful. A live spring is said to exist immediately north of Flagstaff hill, and would probably be on section 20. The water to the south of the hills found in the ponds is of a superior quality to that found to the north, which is more or less strongly impregnated with alkali. No summer frosts were experienced until the first of September. There is no fuel except the standing timber already alluded to; the most of it is fire-killed and of the largest dimensions along the southerly base of the hills in the southwest quarter of the township. There are no stone quarries or minerals of any description. Game, such as ducks and chickens, are plentiful, also rabbits in the poplar bluffs. Deer, although not seen by us, were, to judge by signs, quite numerous. An Indian, so I was informed, killed fourteen head in the hills last fall or winter. A trail, established last spring, runs from No. 1 Battle river mail depot to No. 1 Iron creek mail depot, traversing the southeast quarter of the township in a northeasterly direction.—*C. F. Miles, D.L.S., 1903.*

Township 45.—This township can be reached by trail from Wetaskiwin, via Rosenroll and Heatherbrae, thence by Iron creek trail as described in report of township 45, range 14, west of the fourth meridian. It might also be reached by trail from Lacombe, but I have no knowledge of this route. The soil is principally black loam with clay subsoil and is second and third class. Two valleys run diagonally across the township, one from section 29 to section 13, where it leaves the township, the other starts in section 17 and leaves the township near the southeast corner of section 1, crossing the east boundary; along the course of these valleys are numerous small lakes and ponds. The country is rolling prairie dotted over with clumps of willow and small poplar from 2 inches to 4 inches in diameter and more numerous in the northwest half of the township. There is more or less hay throughout the length of the valleys above mentioned, but there are no good hay sloughs in the township. There are no running streams, the slough water on the high land is fresh, but the lakes or ponds in the valleys are salt or strongly alkaline. Considerable rain has fallen during the first half of July, but there has been no summer frost yet. The only fuel is poplar and willow and there is only a small quantity large enough for that. No coal or lignite was seen. No quarries, but some surface stones. No minerals of value. The game consists of wild duck, prairie chicken and plover.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—We reached this township by trail from Wetaskiwin, by way of Pipestone creek, Rosenroll, Stony creek and Round hill, where we reached the Battleford and Edmonton trail. We followed this trail till we reached township 48, range 13. We then took a southeasterly course to township 46, range 12, thence easterly to range 11. The roads were very bad, as they crossed many sloughs and mud holes. The soil in this township is mostly black loam with a subsoil of clay. There is, however, some gravel between Hattie and Vernon lakes. A good growth of grass is produced and in some parts farming may be carried on, but the township is more suited for grazing. The surface is rolling to hilly prairie, except sections 16, 20, 21 and part of sections 28 and 29 which are undulating. Small poplar and willow are scattered throughout the township except on the above mentioned sections which are open prairie. The timber is small poplar and willow scattered over the township. Good grasses may be cut for hay in the northeasterly part of the township, but the whole tract is more suited for grazing purposes. Enough hay may be had, however, for farmers' use. There is some blue grass mixed with the bunch grass, which predom-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 11.

inates. The water is alkaline and is contained in ponds and sloughs which are constantly renewed by rainfall. The surface is not liable to be flooded. There is no water-power. The climate is mild and wet in midsummer, cold and wet during the early spring and fall. Late frosts about May 20 and early frosts about September 15. Poplar and willow of a scrub nature are the only materials to be had for fuel. No coal or lignite deposits discovered. No stone quarries or minerals were discovered. Wild ducks and chicken are in abundance.—*R. J. Gordon, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail crossing township 48, range 11. A good road can also be made east of the central line in a direction nearly north and south. Though the soil is not very rich in this township, being a small depth of black sandy loam resting on a sandy or hard clay subsoil and stony in some places, good farms can be found here and there. The pasture is good enough. The surface is prairie and scattered poplar bluffs. The country is very broken, principally in the vicinity of the lakes. The numerous bluffs scattered all through this township do not contain much timber large enough for buildings with the exception of the poplar bluffs adjoining Oliver lake, where some poplar from 6 to 10 inches in diameter can be procured. Hay is very scarce. Fresh water is found in all the sloughs and some ponds, but all the lakes contain alkaline water. There is no water-power in this township. The climate is good and there are no summer frosts to injure the crops. There is no stone quarry and no mineral of any description has been found during the subdivision of this township. Fuel is abundant all through the township; it consists of poplar and willow. The game found is the prairie wolf, badgers, foxes, muskrats, rabbits and a few deer. Ducks, wild geese, cranes, partridges and prairie chickens are plentiful. The general appearance of the country in this township is hilly and broken with deep ravines, dotted with lakes, ponds and sloughs.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 48.—This township can be reached by the Battleford trail, which passes through sections 31, 32, 33, 34, 26 and 25, and also by way of Vegreville. The soil here is mostly composed of black sandy loam, resting on a subsoil of sandy clay or sand. The country is not very well adapted for farming, it is so hilly and broken, and cut by a great number of ponds, sloughs and lakes. Nevertheless, east of Camp lake and in the vicinity of the correction line, the land can be cultivated profitably. The surface is prairie, with bluffs of poplar and willow. The bluffs are rather small, and the timber is of inferior quality, and can only be used for fencing and fuel, and probably a few trees here and there can be found for building log cabins. This township cannot be surpassed as grazing land. The hills are covered with very good hay. No large hay marshes or sloughs are found in the township. With the exception of the lakes, where the water is hard, good soft water is found in almost every slough and pond. The climate is favourable to the crops, for according to the report of settlers living north of here there is no summer frost. Wood for fuel is abundant in every part of the township, and consists of large willow and poplar. There is no water-power, no minerals of any sort, and no stone quarries. Game is plentiful. There are deer, badgers, prairie wolves, porcupines, rabbits and muskrats. The feathered game is wild geese, ducks of all species, cranes, partridges and prairie chickens. The country is very broken and hilly, with numerous lakes and ponds. As a sporting country, this township cannot be surpassed.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 51.—The north and east parts of this township are rough and hilly, broken by numerous small ponds and a few lakes. About a half of sections 6 and 7 is covered by a large bay of Birch lake. A large and deep coulee runs across sections 34, 35, 26, 23, 14, 13 and 12, and it can hardly be crossed on foot. The southwest is undulating. It is scrubby prairie, with scattered bluffs of dry and green poplar, and this is the only supply of fuel in this township. The soil is a good black sandy or clay loam, from 8 to 18 inches deep, on a sandy or clay subsoil. The supply of water is

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 11.

abundant, and good everywhere except around Birch lake, where the water is very alkaline. A creek about 4 feet wide and 2 feet deep, with good water, flows southeast at the bottom of the coulee. A trail from Vegreville to Battleford crosses sections 7, 8, 9, 4, 3, 2 and 1. Another from Vegreville going north crosses sections 31 and 32. I opened a trail along the central meridian. These trails would be pretty fair in a dry season, but this year they are very wet. The Canadian Northern Railway surveyed many exploration lines across the south part of the township. Ducks are plentiful; also prairie chicken, partridges, muskrats and wolves. There are no minerals, water-powers or stone quarries. The land is liable to be flooded only around Birch lake, where it is flooded now. This township is generally well adapted for farming. Hay is scarce, but there is some around Birch lake but it is very poor. The grass even on the top of the hills is rich and abundant, but this is probably due to the fact that last season was exceptionally wet. There is no timber in this township, but in the northwest portion there is some poplar large enough for building shacks and for fencing.—*A. Michaud, D.L.S., 1903.*

Township 52.—The township is rough and hilly, broken by innumerable small ponds and a few good sized lakes. A large and deep coulee crosses sections 19, 20, 17, 8, 9, 5, 4 and 3. A creek 3 feet wide and 3 feet deep crosses sections 20, 29, 28, 27, 26 and 25 flowing east; both this creek and the one in township 51, range 11, drain the coulee, one flowing east and the other southeast. This one mentioned above is the only permanent creek; all other streams are due to the great amount of rain which has fallen lately. There is a large lake on sections 12, 13 and 14. The soil is a black sandy and clay loam from 3 to 12 inches deep on a sand or clay subsoil, average second class. This township would be well adapted for farming if it were not so hilly. The soil is rich and has good vegetation, but there is no hay except at the bottom of the coulee, and it is under 2 feet of water. Half of the township is covered by bluffs of thick poplar from 3 to 12 inches in diameter. The rest is scrubby or open prairie, being mostly in the centre of the township. The supply of water is abundant and permanent. A trail crosses sections 2, 3, 10, 9, 17, 20, 30 and 31, going to Whitford lake, another trail from Vegreville branches from this one on section 17, where it crosses the coulee. This is the only place where the coulee can be crossed with teams and loads. Branching from the first trail on section 30, I opened one across sections 30, 32, 33, 27, 26, 35 and 36. These trails are good considering the rough and hilly character of the country. Ducks are plentiful and there are a few prairie chicken and partridge. Muskrats are abundant, but Chippewa Indians are trapping them by hundreds. We saw 6 or 7 bears and 1 deer. No fish. The land is not liable to flood if we except the bottom of the coulee and the south of the creek on sections 26, 27 and 28, which lands are now flooded. The only place to cross that creek is on section 20 at its source. No summer frost. There is no water power, minerals or stone quarries. There is no timber in this township but poplar, but as these are 3 to 12 inches in diameter they will be big enough for the building of log houses and fencing. There is enough of them for these purposes on every quarter section.—*A. Michaud, D.L.S., 1903.*

Township 53.—This township is rough and hilly, covered by thick poplar bush with heavy underbrush of willows. The soil averages 4 inches of black sandy or clay loam on a subsoil of sand or clay. The township is not suited for agricultural purposes, and there are no trails passing across it. At the time of the survey nearly half of the township was under water, every hollow was filled with good water. Ducks, partridge and muskrats are thick. There are also a few bears but no fish. There is a big hay slough on sections 25 and 36, but it was covered by at least a foot of water. The northeast half of the northeast quarter of section 36 is open prairie and would be a good homestead. There is no mineral, no stone quarries and no water-power. Poplar is the only timber and they are from 4 to 12 inches in diameter. There are also a few birch on section 34, size 8 or 10 inches in diameter.—*A. Michaud, D.L.S., 1903.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 11.

Township 54.—This township is rough and hilly, broken by numerous ponds and swamps and is partly covered by poplar and spruce from 6 to 12 inches in diameter. Vermilion river crosses sections 30, 19, 29, 20, 21, 22, 16, 15, 14, 11 and 12. There is a little hay on the south side of the river on sections 12, 11 and 15, but more on the north side, especially on sections 21, 20 and 29. A ranch is located on section 21 and is keeping about 80 head of cattle. This part of the township along the Vermilion would be good farming and ranching country, while to the south and the northwest of the Vermilion, would be a good second class farming land. The northeast quarter of the township is very rough. The soil is a black sandy or clay loam from 4 to 18 inches deep on a clay or sandy clay subsoil. The old Battleford trail crosses the township on the north side of the Vermilion. I opened a trail on the south side across sections 1, 11, 15, 16, 17, 18 and 19. The Battleford trail is wet, but the one I opened is good. The supply of water is abundant and good. Prairie chicken, partridge and muskrats are plentiful. I have been told that there are some fish in the Vermilion, but I saw none. The land along Vermilion river was flooded. There are no water-powers, minerals nor stone quarries. The poplar runs from 6 to 12 inches in diameter and is distributed in bluffs more or less all over the township. There are also spruce or tamarack swamps on sections 2, 10, 9, 16, 22, 23, 24, 28, 33, 32, 13 and 26. Spruce is not in sufficient quantity for trade, but there will be enough to answer the needs of the settlers: few of them are as large as 20 inches on the stump.—*A. Michaud, D.L.S., 1903.*

Range 12.

Township 1.—This township is rough and broken prairie, well adapted for stock grazing. Milk river flows eastward across the northwest corner. Clumps of bush are found in the river valley and in some of the coulees running into the river. The soil is second and third class. There are several ranchers located in the township.—*E. J. Rainboth, D.L.S., 1902.*

Township 2.—This township is generally a rolling prairie, with a good growth of grass of excellent quality. Milk river crosses the southeast corner, flowing eastwards; its valley affords shelter for stock during stormy weather. There were a number of cattle found grazing over this township, for which purpose it is best suited.—*E. J. Rainboth, D.L.S., 1902.*

Township 38.—This township is easily reached as the main trail from Red Deer to Battleford passes through it. The soil is a clay and black loam, with a clay and sandy subsoil. The black loam is not very deep, not more than 6 to 8 inches at the most. This township is ranked as second class land, and is suitable for grazing purposes. The surface is rolling prairie, dotted with bluffs of poplar and willow bush. The timber consists of some large spruce from 10 to 20 inches in diameter, also poplar and balm of Gilead. These are found in section 31 along Beaverdam creek, and also along the creek which runs through sections 23, 26 and 36 to Battle river. A limited quantity of hay is found only around the hay sloughs. Good fresh water is obtained from the Beaverdam in sections 31 and 32, and also from the creek which runs through sections 11, 14, 23, 26 and 36 into Battle river. There are no falls or rapids in the township. Wood is scarce, but a considerable quantity can be obtained in the township north along the banks of Battle river. No coal or lignite veins were found, and there are no stone quarries or minerals in the township. Ducks, geese and prairie chickens are the only game found.—*Joseph A. Carbert, D.L.S., 1903.*

Township 40.—The most convenient route for reaching the township is from Wetaskiwin along the trail to the north of Battle river. The road is not in good order. The township as a whole is rated as class two. It is suitable either for farming land or stock-raising, especially the latter. About one-half of the township is covered with

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 12.

scattered bluffs of poplar and willow, and the remainder is open. The timber is all small and it is only suitable for firewood. Hay sloughs and meadows are plentiful in the western half of the township, and they grow the ordinary wild hay of the country. The surface water in the swamps is fresh and many of them are permanent, I should judge. They are certainly plentiful this season. No streams were found in the township and there is therefore no water-power. The climate seemed fine and no summer frosts were observed. The poplar found in the township is very small, practically not fit even for firewood. Good firewood can be obtained within a reasonable distance from Battle river. No coal seams were observed and no solid deposits of rock show on the surface. No minerals of economic value were noticed in the township. Prairie chickens and the various kinds of wild waterfowl are plentiful.—*Thomas Drummond, D.T.S., 1903.*

Township 41.—This township is located about 100 miles easterly from Wetaskiwin, the nearest station on the Calgary and Edmonton branch of the Canadian Pacific Railway, and may be reached by a very fair and direct trail. In normal seasons this trail is in pretty good condition, but in wet seasons, as the past one proved to be, it is at times very miry in places, otherwise reasonably heavy loads can be brought over it by teams. The soil consists of a black loam, varying in depth from 3 to 12 inches, underlaid by a sand and clay subsoil. The south half of the township is superior to the north half, although somewhat broken by the more or less abrupt southerly slope of the hills, referred to in the description of 41-11-4. The northerly portion is much cut up by marshes and flats of an alkaline character, and therefore not particularly adapted for grazing or the raising of cereals, with the exception of the northerly tier of sections. Good pasturage is found over nearly the whole of the south half, which also is likely to produce good crops when once broken up and cultivated. The greater part is open prairie, rolling along the southerly two tiers of sections, flattening out toward the centre and the north. No timber of any considerable quantity or value exists, what there is being mostly in the north. Poplar and willows, the latter predominating, would not cover more than 7 per cent of the whole area. Probably 600 or 700 tons of upland hay were cut the past season north and west of Schultz lake, which is situated in parts of sections 3 and 4. Water was quite plentiful during the past season, principally surface water, but of inferior quality. Some running water was observed in a coulee on section 31 and in the northeast corner of section 32, but it is my belief that it is not permanent and merely owing to the heavy rains prevailing during the summer. On section 24 there is part of a small lake which may retain water permanently. If such be the case, it is quite possible that it is fed by springs. The climate was most variable, no very warm weather was experienced, neither were there any summer frosts, at least not before the beginning of September. The supply of fuel is scarce and may have to be brought from a distance. Coal seams are said to exist on Battle river, some 15 miles to the south and to the east. None was found in this township, neither were there any stone quarries nor fixed rock of any description, and no minerals whatever. In the southeast corner of the township a spur of the hills above mentioned faces somewhat abruptly to the south, but runs out by a very gradual almost imperceptible descent to the north. There being no running water of any account, no water-power exists.—*C. F. Miles, D.L.S., 1903.*

Township 45.—This township can be reached by trail from Wetaskiwin via Rosenroll and Heatherbrae, thence by Iron creek trail as described in report of township 45, range 14, west of the fourth meridian. It might also be reached from Lacombe, but I have no knowledge of the trail. The soil is principally a black loam with clay subsoil. A shallow valley runs diagonally across the township from section 30 to section 1, dividing it into nearly equal parts. To the north and east the country is very rolling and fit for grazing only, while to the south and west it is more level and fit for mixed farming. The surface is prairie with bluffs of poplar and willow

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 12.

and numerous small ponds and sloughs, round most of which there is a thick growth of young poplar and willow brush. The only timber is young poplar, averaging from 2 to 4 inches in diameter, growing in bluffs and around swales. The largest seen was in sections 23, 24, 25 and 1, where it was about 6 inches in diameter. There is more or less hay throughout the length of the valley above mentioned, but of poor quality. There are no running streams in the township, but the water is fresh and much better in quality than in the townships previously surveyed, as there is no alkali, and most of the ponds appear to be permanent. There is no water-power. Considerable rain has fallen during the past fortnight (June), but there have not been any frosts. The only fuel is poplar and willow. No coal or lignite has been seen. There are no stone quarries or minerals. Duck, prairie chicken and plover were seen.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—We reached the township by way of Wetaskiwin on the Calgary and Edmonton Railroad, thence by trail passing Pipestone creek, Rosenroll, Stony creek, Demay lake and Round hill where the Battleford and Edmonton trail joins the trail from Stony creek. We followed the Battleford and Edmonton trail as far as range 13, where we took a southeasterly course till the township was reached. The roads were very bad as the trail crosses many sloughs which cannot be avoided. The soil is mostly black loam with a subsoil of clay, producing a luxuriant growth of good grasses. The surface is hilly prairie dotted with small poplar and willow. There is some poplar large enough for fuel but not large enough for building purposes. Hay may be cut from nearly any part of the township as the grass is luxuriant and of good quality, there being considerable blue grass, bunch grass and a variety of other prairie grasses. The fresh water ponds are numerous and are constantly renewed by rainfall. Good surface wells may be obtained. There are no streams and the surface is not likely to be flooded. The climate is mild in temperature and very wet. Rain has fallen almost incessantly from June 18 to September 15, and very little sign of its clearing; the sun seldom shining, but it is hot when it does. We had late frosts about May 25 and frost again about September 20. In spite of these drawbacks vegetation grows rapidly and is surprising. The only fuel to be had is small poplar and willow which is scattered throughout the township. There are no indications of coal or lignite whatever. The only stone to be found is in gravel beds in the east central part of the township. No minerals were discovered. There are ducks and geese in abundance, also prairie chicken; two deer were sighted. This township is more suited for stock raising than for any other purpose.—*R. J. Gordon, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail, passing a few miles north of Thomas lake, which is the best road from Wetaskiwin. The soil is mostly composed of black sandy loam resting on a subsoil of sandy clay or sand. The central part of the township can be profitably cultivated but the remainder is more of a ranching country, the land being hilly and broken and cut with innumerable sloughs and ponds. The surface is prairie and willow and poplar bluffs all through the township. The poplar found vary from 4 to 8 inches in diameter and can be used for building log houses. There are no bluffs of any extent but what there are, are located mostly in sections 27, 28, 33 and 34. At the west of Thomas lake there are a few hay marshes which produce a large quantity of good hay. The hills are covered with a good grass. In the flats good hay can be made to meet the requirements of the settlers. Rain has been too abundant this year to allow the cutting of hay in the sloughs. Nearly all the ponds in the township contain alkaline water, while comparatively good fresh water can be had in all the willow sloughs. There is no stream of any description here. The climate seems to be good with no summer frost. I happened to see some beautiful potatoes and pease in bloom, also oats and vegetables of all kinds grown by Mr. H. H. Thomas, a squatter on south half of section 34; his crop is very promising. There is enough poplar for fuel for a few years to come.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 12.

No minerals nor stone quarries have yet been found here. In all the surrounding townships the game consists of prairie wolves, badgers, foxes, porcupines and rabbits. Last winter a few deer were seen around here. Bustards, wild geese, ducks of different kinds, partridges and prairie chickens, seem to be plentiful. The southern portion of Thomas lake is situated in this township on sections 32, 33, 34 and 35. The depth varies from 8 to 15 feet. From the east end of this lake there is a deep valley running southeast with a chain of small alkaline lakes, which in the past probably **formed** but one lake with Thomas lake. The general appearance of the township is **hilly** and broken with deep ravines and dotted with ponds. The side hills are covered with willow and small poplar bluffs. The land in sections 3, 4, 9, 10, 14, 15, 16, 17, 18, 21, 22, 31, 32, 33 and 34 can be cultivated, as they are not so hilly as the rest of the township, which part, however, cannot be surpassed as grazing land.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 53.—The southwest quarter of sections 19, 30 and 31 are very rough and hilly, densely wooded with poplar of large size. The north of Plain lake is low and wet, covered with willows and small poplar. The balance of the township is scrubby prairie (rolling) with scattered bluffs of dry or green poplar, which will give a good supply of fuel. Plain lake covers almost half of the north half of the township. A chain of lakes connected by a creek runs across sections 1, 2, 3, 4, 9, 8, 5 and 7. There are also numerous ponds and lakes. The soil is a black sandy or clay loam on a subsoil of sand, gravel and clay, the depth of the loam being from 4 to 18 inches and over. There is a little hay on sections 21, 22, 23, 16, 15, 14, 10, 11, 2 and 1, but this year this portion was under water. When cleared of bush and drained the north of Plain lake will grow first class hay; the draining would be easily done by deepening 3 or 4 feet the outlet of Plain lake on section 32 for about 100 yards. Ducks, prairie chicken, partridge and muskrats are plentiful and there are a few deer and bears. An old Indian trail, pretty wet in some places, crosses sections 1, 2, 11, 14, 15, 22, 21, 29 and 30, connecting to the west with the trails to Whitford and Vegreville, and to the east with the trails in township 52, range 11, and 54, range 12. Many Galicians are already established here. The supply of water will be good and permanent. There are no fish in the lakes. There is no water-power, minerals or stone quarries. Poplar is the only timber in this township. There is a good supply of large size (from 6 to 12 inches in diameter) in the southwest quarter, and also in the north quarter of the township, but they are smaller.—*A. Michaud, D.L.S., 1903.*

Township 54.—The south half is rough and hilly, north half is undulating. The south half very wet, especially to the southeast, but would be easily drained, being 150 or 200 feet above Vermilion river. If drained it would be a good second class land for farming, as soil is a sandy or clay loam on a subsoil of sandy clay or clay. The north half along the Vermilion is good for ranching; the balance of the township being suited for farming. The outlet for Plain lake in township 53, range 12, crosses sections 6, 7, 8, 17, 18, 19, 30 and 31 to Vermilion river. The Vermilion and the lakes cross sections 30, 31, 32, 29, 28, 27, 26 and 25. Every one of these sections is good hay land. Two ranchers, Hughson on section 25 and Fife on 32, are keeping each about 200 head of cattle, and St. Hilaire on sections 25 and 36 has about 25 head. The Battleford trail on the north side of the Vermilion crosses sections 31, 32, 33, 34, 35 and 25. Two other trails branch from this trail on sections 35 and 31, and lead to Todd's crossing on the Saskatchewan. On the south side of the Vermilion, another trail leading to Vegreville crosses sections 24, 23, 22, 21, 20 and 18. The Vermilion is easily crossed with teams and loads on the east boundary of section 31. There are no minerals, water-powers or stone quarries of any kind. Wild duck, prairie chicken and muskrats are abundant. We saw also a few bears. There are no fish at all except in the Vermilion, so I was told, but I did not see any. The south half of this township is densely wooded with poplar from 3 to 12 inches in diameter, but the north half is scrubby prairie, with scattered bluffs of poplar.—*A. Michaud, D.L.S., 1903.*

TOWNSHIPS WEST OF THE FOURTH MERIDIAN.

Range 13.

Township 1.—This township is a rolling prairie, very much broken, with deep coulees extending from the south outline to Milk river, which flows eastward across the northeast corner. These coulees are generally wooded with poplar and willows, and in some are found springs of good water. Some cattle ranchers are located in the township. The grass is of an excellent quality and the soil is sandy loam of second quality.—*E. J. Rainboth, D.L.S., 1902.*

Township 2.—This township is a rolling prairie excepting the southwestern part, which is hilly and broken by coulees running into Milk river, which flows southeastward across the southwest corner. Some poplar and willow bush is found along the river in places, affording good shelter for stock, for which this township is well adapted as the grass is of a superior quality for grazing purposes. Three ranchers or stockmen are located along the river bottom, owning each several hundred cattle. The soil is generally a sandy loam and is classed second quality.—*E. J. Rainboth, D.L.S., 1902.*

Township 37.—This township is reached by a well travelled trail passing through the township running from Red Deer easterly to Battleford. The soil is generally a loamy clay, with black sandy loam in some portions, and with the exception of a few sections of first class land is ranked as second class. It is suitable for agriculture and grazing. The surface is open rolling and undulating prairie, somewhat broken by ravines. There is no timber of any kind in the township. A moderate quantity of hay is found around the hay sloughs. Good fresh water is found in Beaverdam creek and several other smaller creeks in ravines, and also in the hay sloughs. There are no rivers, waterfalls or rapids in the township. There is no timber or wood for fuel purposes, but coal can be obtained in the adjoining township to the west. There are no minerals or stone quarries. Ducks and prairie chickens are the only game found.—*Joseph A. Carbert, D.L.S., 1903.*

Township 38.—The ranchers' trail going to Blackfalds passes through the south part of this township. It is a fairly good trail. The soil is generally a layer of black loam over a clay subsoil, not as hard here as in the townships already surveyed. The surface is mostly rolling prairie, with scattered bluffs of small poplar and willows of little account, except on sections 6 and 5, where there is poplar from 3 to 5 inches in diameter. There is hay all over, but especially towards the south part. Beaverdam creek flows through the northern tier of sections. The banks are very easy, and not more than 20 to 40 feet high. It can be crossed nearly anywhere in a dry season; however, there are two good crossings, one on section 36 and the other one on section 33. This stream is about 10 feet wide, 2 to 3 feet deep, and the water is good, as is also that in the sloughs. There is not sufficient fuel for any length of time, and I have seen no indications of coal nor any minerals of value. There is no exposed rock. There is one settler. He has a ranch on southwest quarter of section 36.—*Geo. P. Roy, D.L.S., 1903.*

Township 39.—There is no regular trail across this township. However, the ranchers to the southeast, as evidenced by the tracks I have seen, cross it to go to Wetaskiwin, a town situated on the line of the railroad from Calgary to Edmonton. Red Deer can be reached by the trail leading to the township to the south of this one, then by going due west along the correction line travellers would meet the trail to Willow creek, which leads to Lacombe. The soil is generally fair, being black loam over a clay subsoil. There are quite a number of small boulders on sections 22 and 23. The south half of the township is rolling prairie, mixed with bluffs of poplar and willow, these last forming a fringe around the numerous sloughs found in the township. It becomes hilly in sections 13 and 14. The north half of the township is mostly badly broken country, cut by numerous coulees and deep ravines, leading mostly all to Battle river, which flows across the northeast corner in the bottom of a valley two hundred feet

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 13.

deep, and bordered by very steep banks. The valley of Paint-earth creek is nearly as large and certainly as deep as the valley of Battle river, and divides the country in such a way as to make the northwest corner, through which it runs, unfit for farming purposes. Duck and prairie chicken are found in all the surrounding country, but are about the only game in the country.—*George P. Roy, D.L.S., 1903.*

Township 40.—The township can be reached by road from Wetaskiwin, Red Deer or Lacombe, but the road is not in good order. The soil is fairly good, mainly second class, suitable for either farming or ranching. The surface of the township is very much cut up by the valley of Battle river and its tributary gulches and ravines. It is more or less thickly covered by bluffs of poplar and willow, affording a plentiful supply of firewood. A limited amount of good building timber is available in the valley of Battle river. Good hay meadows and sloughs are scattered over the township. The surface swamp water is fresh, but in extremely dry seasons it may not be permanent. There are quite a number of springs in the ravines, but most of them are slightly alkaline. The township is traversed by Battle river, which is good fresh water. It is from one and a half to two chains in width and three to ten feet in depth; the current is about one and a half miles per hour. Natural water power is non-existent, and it cannot be developed artificially. The climate is pleasant and no summer frosts were observed. Indications of coal are to be seen along the river, and good workable seams could probably be developed. Sandstone, impure limestone and clay ironstone are also exposed along the river. Ducks, geese, swans, sandhill cranes, prairie chickens and rabbits are plentiful, and there are quite a number of deer.—*Thomas Drummond, D.T.S., 1903.*

Township 41.—This township is situated on the direct trail from Wetaskiwin, a station on the Calgary and Edmonton branch of the Canadian Pacific Railway, distant about 90 miles from Schultz lake. It is a fairly good trail, except in very wet seasons, most of the steep hills being graded and the creek crossings bridged. During ordinary seasons a fairly good load can be hauled over this trail. The soil generally consists of black loam, varying in depth from 3 to 12 inches, underlaid by a stiff clay, which is more or less difficult to penetrate. The southwest quarter of this township may be classed as superior to the remaining part, and is more thickly wooded, an indication of the soil being better adapted for cultivation than the open parts. Most of the land in the remaining portions can only be rated as second class, and in the southeast quarter is third class. Here the greater part of the water contained in the ponds and marshes is of an alkaline nature. In the easterly half of this township open prairie predominates, the southerly half of which is much cut up by ponds and marshes, some of which cover a considerable area, but whether they are permanent appears to me doubtful. The timber which is at all suitable for domestic purposes is nearly all located on the southwest quarter, the poplar rarely exceeding 10 inches in diameter. Sufficient might be had, in the early stages of settlement, for a limited amount of building logs and for fuel. The meadows, or what may at certain dry seasons constitute meadows, are now more or less flooded, so that hay, if necessary, during the last few wet seasons, would have to be obtained from the uplands. The water in the ponds and marshes is all surface water; none of any permanent character is seen, to the best of my knowledge, unless there may be found springs in a ravine or coulee, which traverses the whole breadth of the township. This ravine or coulee enters the township on section 19, leaving it again on section 25, thence traversing the corners of two more townships easterly and emptying in a good sized lake, with an alkaline bottom, in township 42, range 11, and thence ultimately emptying into Battle river to the east. This ravine crosses sections 19, 20, 21, 22, 23, 26 and 25, and is almost impassable, the bottom being generally a boggy marsh. The banks vary in height from 20 to 30 feet, and are not very steep, but the boggy bottom itself forms a sufficient bar against easy crossing at any place. For the information of intending settlers, it may be stated that the

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 13.

southerly half of this township is easiest of access by crossing the ravine in the southwest corner of township 42, range 14. The trail to Schultz lake crosses the ravine on section 25, where, however, it is very mucky, and would not make a permanent crossing except by bridging. The climate, as far as experienced, is probably similar to that of adjacent townships where no frosts were noticed until early in September. No stone quarry or fixed rock of any description was observed. There being no running water, of course there is no water-power. There is a slight current in the ravine mentioned above, a few miles to the east. By constructing a dam across the ravine in some convenient place, it is possible a reservoir might be formed, retaining water for a limited period. Game, such as chickens, duck and deer, appeared to be plentiful.—*C. F. Miles, D.L.S., 1903.*

Township 42.—A trail from Wetaskiwin, the nearest station on the Calgary and Edmonton branch of the Canadian Pacific Railway crosses the southwest quarter of this township. During ordinary dry seasons it is in very fair condition, so that reasonably heavy loads may be brought over it, the distance from Wetaskiwin being about 85 miles. The soil consists of a black loam with a depth varying from 3 to 12 inches, underlying which is a subsoil of clay, a very tenacious substance, at times difficult to penetrate. This township is largely open prairie, the wooded portion not exceeding 8 per cent and the greater part of this consists of willows. Some few small poplar groves are scattered through the southerly part of the township, the greater portion, however, being located in the northeast quarter, not exceeding, however, 8 inches in diameter. But little of this is suitable for building purposes and as for fuel, there is but a limited supply. There are a good many hay meadows more particularly in the southern part and some in the western part of the township, which, however, this season, were all flooded to over-flowing. Water is very plentiful, in fact every depression was filled up, but as far as I could see, it was only surface water. The flats generally were sodden, owing to frequent heavy rains, but no live springs or running waters were discovered. A ravine or coulee traverses this township through its central portion in about an east and southeasterly direction, and it is quite possible that springs may exist somewhere along its banks, which vary considerably in height in places as on the east boundaries of sections 17 and 20 where it is flattened out to a level marsh and then again rising to the east, or lower down, to banks rising to the height of 30 or 40 feet. To the west, too, banks were seen along the course of the coulee. There is water in the bottom, but no perceptible current in this township, although farther down a current was noticed flowing easterly. There are no quarries, but stones and boulders are strewn thickly along the bottom of the above mentioned coulee. No minerals of any description were seen nor was any fixed rock discovered. With regard to climate but little can be said, this season altogether being an abnormal one. A great deal of rain fell and no excessively warm days were experienced, nor any summer frosts either, the first one being noted early in the month of September. A heavy thunder storm was experienced on the afternoon of August 29, accompanied by hail and hailstones of unusual dimensions. Game, such as ducks and prairie chickens were encountered daily, as also on several occasions larger game such as deer. These latter were observed in the northeasterly portion of the township, where it was more wooded than in the other parts.—*C. F. Miles, D.L.S., 1903.*

Township 45.—For route refer to township 45, range 14. The soil is a black loam with clay subsoil and sand and gravel in places. It is suitable for mixed farming. The township is mostly undulating prairie, rolling in the southern portion with gravel and stony ridges. There are several small sloughs fringed with willow and small poplar 3 inches to 4 inches in diameter in the eastern portion. A small alkaline creek averaging 10 links wide and 2 feet deep and sluggish current enters on section 32 and runs in a southeasterly direction and leaves the township in section 2. It would in case of a wet season be liable to flood a considerable part of the northern

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 13.

portion of section 16 and the southern portion of section 2. Small ponds cover a portion of the west part of section 10. Lakes in the eastern part of sections 24 and 13 are now mere sloughs; these would ensure a permanent supply of water. There is no water-power in the township. Climate is dry and windy, northwest winds prevailing. A white frost occurred on June 9. There is a limited supply of poplar in the eastern portion of the township. No coal or lignite was seen and no stone quarries but some loose boulders. No minerals of economic value were found. No large game was observed, but small game such as rabbits, ducks and grouse are plentiful.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—Route to this township is the same as given in report of township 45, range 14. The soil is a light black loam 4 to 12 inches with clay subsoil, gravelly in places, suitable for mixed farming. The township is rolling prairie with gravelly and stony ridges, numerous sloughs and willow swales. There is a large grassy marsh on sections 27, 28, 33 and 34; on 20 and 29 and on 14 and 15. There is no timber except fringes of poplar 3 to 4 inches in diameter. Willow swales mostly in the southern portion of the township. No hay meadows excepting the coarse grass in the sloughs. The water in this township is alkaline. A small stream 5 to 10 links wide and an average depth of 2 feet, sluggish current, passes through sections 30, 19, 18, 7, 8 and 5 flowing in a southwesterly direction; no permanent supply is available. The climate is dry and windy, prevailing winds northwest. There is a limited supply of wood in the southwest portion of the township. No coal or lignite, stone quarries or minerals of economic value were found. No large game was observed, but small game such as rabbits, grouse, ducks and geese are plentiful.—*Hugh McGrandle, D.L.S., 1903.*

Township 47.—This township can be reached by the Battleford trail passing near and parallel to the north boundary of township 48, range 13, and also by a wagon road passing east of Thomas lake, a road which goes as far as Quarrel lake; both trails are very good and heavy loads can be teamed over them. Four-fifths of the land in this township is well adapted for farming, being composed of a good depth of black loam, resting on a subsoil of clay and sand. The remaining portion can be utilized as pasture. The best farming land is found on sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 23, 24, 25, 26, 32, 35 and 36. The surface is scrubby in the low places with small bluffs of poplar and large prairie openings scattered all through the township. There is no timber of any value except for fuel. A great number of sloughs and marshes containing good water and hay are found all through this township. The water here is generally fresh. There is no stream of any size. No minerals or stone quarries were noticed. There is no summer frost to harm the crop, according to the report of settlers living north of here. The game found here is the prairie wolf, fox, badger, porcupine, hare and a few skunks. As to the feathered game, there are prairie chicken, partridges, ducks of different species and wild goose in abundance. The only lake found in this township is lake No. 1 of a general depth of 5 or 6 feet and containing fresh water. The country is undulating through the central and western portion, while it is rolling and hilly in the north and east. On the east boundary, the country is rough and hilly. Settlers will find here all they want. They can get poplar logs for building their houses in township 47, range 12, south of Thomas lake. Loose stones for foundations are found in some places, especially in the hollows. The poplar for fuel found in this township if cut judiciously, will last a few years. The country presents a very pretty aspect and roads can be made in all directions with comparatively very little expense.—*J. B. Saint-Cyr, D.L.S., 1903.*

Range 14.

Township 2.—This township is a dry rolling prairie broken by ravines running into Verdigris coulee and Milk river, the latter runs across the township in the south-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 14.

ern part from west to east and the former crosses diagonally from the northwest corner which is occupied by a large alkali slough or pond emptying into Milk river on section 12. The soil is generally a sandy loam, mostly second class, with a good growth of grass and is most suitable for ranching or grazing purposes. A sheep rancher is located at the mouth of Verdigris coulee.—*E. J. Rainboth, D.L.S., 1902.*

Township 37.—This township lies directly south of the main trail leading from Red Deer to Battleford. The soil is a good black sandy and clay loam from 18 to 24 inches in depth, and is suitable for agricultural and grazing purposes. The surface is rolling prairie except in the northeast corner where it is somewhat broken by a creek with cut banks. There is no timber of any account in the township. Good hay in large quantities can be found around the sloughs and the lake. Good water is found in Beaverdam creek and other small creeks, and fair water in the lake at the northwest corner. There are no falls or rapids in the township. Very little wood can be had for fuel. Evidences of coal deposits were found in sections 23 and 24 along Beaverdam creek. No stone quarries or other minerals were found in the township. Ducks, geese and prairie chickens were found in abundance.—*Joseph A. Carbert, D.L.S., 1903.*

Township 38.—The main trail of this country leading to the railroad passes through the south part of this township. A substantial bridge 11 feet wide by 33 feet long has been built by McAviety over Beaverdam creek near the quarter section post on the east boundary of section 3. The soil is generally a layer of 6 to 12 inches of black loam over a hard clay bottom, looking in many places as if it had been baked. What is called the 'bad lands' is situated in this township and covers part of sections 8, 9, 16, 17. The surface is rolling. There is very little timber on the township, with the exception of the sixteen sections forming the northeast part of it, where there is some poplar and willows. There is a certain amount of spruce along Beaverdam creek. Hay is found all over the township in these wet years, more especially towards the south. The water in the sloughs, of which there are not a great many, is generally good, as is the water of Beaverdam creek. The said Beaverdam is a creek about 10 feet wide, with an average depth of 3 feet, probably dried up except during rainy seasons. It furnishes no water-power. The timber in the township would not supply fuel for more than a year, but coal exists at least on section 2, and is found right on the trail. The climate is as good as it is anywhere in Alberta. On the Beaverdam near the intersection of the east boundary of section 16, there is a kind of quarry of soft stone which appears to me to be nothing else but clay half baked. I hardly think it is solid enough to be used as building material. The only squatter on this township is Mr. McAviety on the southwest quarter of section 2.—*Geo. P. Roy, D.L.S., 1903.*

Township 39.—Blackfalds. Red Deer and Lacombe are reached by the trail which crosses township 38, or by travelling on the correction line until it intersects the same trail. A track running northwest across the township leads to Wetaskiwin. The soil is generally black loam over hard clay. The surface is mostly rolling prairie, with bluffs of poplar and willows. The valley of the Paint-earth and the numerous deep gullies leading to it will be the main drawback to the speedy settlement of this township. The water of the Paint-earth and that in the sloughs will be scarce in very dry seasons. There is no water-power available. The climate is the same as all over this part of Alberta. I believe coal could be found in the township, as there are indications of it on section 2, township 38, south of this one. I have noticed no stone quarries. Ducks and prairie chickens are the only kind of game. There is an abandoned shack with about six acres of land under cultivation about the middle of section 24.—*G. P. Roy, D.L.S., 1903.*

Township 40.—The township can be reached by road from Wetaskiwin, Lacombe and Red Deer. The first is probably the best route, but the road is not in good order. The soil is fairly good, mainly second-class. It is suitable either for farming or ranch-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 14.

ing, especially the latter. Battle river traverses the township. It is one and a half to two chains in width, and from three to ten feet in depth. The current is about one and a half miles per hour. The adjoining lands are not liable to be flooded. Water-power cannot be developed from the river. The surface is much cut up by the valley of the river and its tributary gulches and ravines. It is more or less thickly covered by bluffs of poplar and willows, suitable for firewood, but a fair amount of good timber, both poplar and spruce, can be obtained in the valley of the river. A fair amount of hay can also be cut in sloughs scattered over the township. The surface swamp water is fresh, but probably not permanent in very dry years. A good many springs are found along the river, but many of them are alkaline. Indications of coal and iron are to be found along the banks of Battle river; workable seams of coal could probably be found. Sandstone, impure limestone and clay ironstone were observed along the river in the cut banks. The climate is pleasant, and no summer frosts were observed. Ducks, geese, swans, sandhill cranes, prairie chickens and rabbits are plentiful, and there are also quite a number of

—*Thomas Drummond, D.T.S., 1903.*

Township 41.—This township is situated about 85 miles east of Wetaskiwin, the nearest station on the Calgary and Edmonton branch of the Canadian Pacific Railway. A direct trail from Wetaskiwin to Schultz lake on the south boundary of section 3, township 41, range 12, passes within a few miles of the northeast corner of this township, and is available for incoming settlers. The soil consists of a black loam, varying in depth from 4 to 12 inches, with generally a clay subsoil, which to judge by the luxurious growth of the grasses promises good returns from cultivation. Both the easterly and westerly portions consist of rolling prairie (the latter more so than the former), in places somewhat densely covered with poplar and willows, which is more particularly the case on the westerly half. The central portion is fairly open prairie, with an occasional grove of second growth poplar. About twenty per cent of the whole area is covered with poplar and willows, the former up to 7 and 8 inches in diameter. The only timber found is poplar, some of which is suitable for building purposes and much of it for fuel. There are many ponds and marshes in the southerly half which might be available in dry seasons for hay meadows, but are this season filled with water to overflowing. However, the growth on the upland is so luxuriant that any quantity of hay might be cut there. Much of the water in the southerly part of the township is impregnated with alkali, the ponds of that character being generally open and not surrounded by any bushes, whereas those that are surrounded by a fringe of willows or poplar invariably contain sweet water, but being only surface water none of it is of a permanent nature. A watercourse formed many ages ago contains only standing water, no current being perceptible. It forms a ravine or coulee, with banks varying in height from a slight elevation up to about 30 feet, and traverses the northeast corner of the township, entering on the northeast corner of section 32, and leaving again on the southeast corner of section 24. The bottom of this coulee is of a very boggy nature, and contains but few places where teams may be driven safely across. The best and easiest crossing is on section 32, where the banks are elevated but a few feet above the surface of the water, the water there being about 15 to 18 inches in depth. No water-power is available in this township. The climate as experienced during the past season was moderate, but exceedingly damp, with no extreme of summer heat and cool nights. For fuel there is sufficient poplar available that may supply incoming settlers for some few years. No coal of any description was observed, nor quarries or fixed rock; neither were there any minerals discovered. Game, such as prairie chickens and ducks of different varieties were seen in abundance; also some deer were observed.—*C. F. Miles, D.L.S., 1903.*

Township 42.—This township is easily accessible by trail from Wetaskiwin, the nearest station on the Calgary and Edmonton branch of the Canadian Pacific Rail-

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 14.

way and about 80 miles distant therefrom. There are many settlers along this trail which has been graded in the worst places, and nearly all the creek crossings are spanned by bridges. The trail in fairly dry seasons is good enough to haul reasonably heavy loads over. The wettest parts of the trail is now avoided by going via Spring lake post office (Never-go-dry-lake). A store has recently been opened there which is only about 10 miles from the northwest corner of the township. The soil generally consists of a black loam varying in depth from 2 to 12 inches, underlaid by a clay subsoil which is more or less difficult to penetrate and which is also to a great extent the cause of so much surface water in this township. Most of the land may be rated as second class, it being to a great extent cut up by ponds and willow swales, more especially the southerly half of the township and the northeasterly quarter by alkaline ponds and marshes. The southerly half is also more or less densely covered by willow bunches and second growth poplar. Not much of the latter is available for either building or other useful purposes. Most of the meadows, where in former years, hay could be cut, were flooded this year, so that ranchers were compelled the past season to cut upland hay, which although perhaps more nutritious does not yield the same quantity per acre as the marsh meadows. In ordinary dry seasons the meadows would probably furnish sufficient hay. Taking it altogether it may be stated with a considerable degree of certainty, that this township is and will be in the future, better adapted for raising cattle, than for raising of cereals. There are two ranchers in this township at the present time, whose buildings and corrals are located in the northwesterly quarter. Between them they have about 800 head of cattle and they cultivate only sufficient ground to supply themselves with the necessary vegetables required for their own use. On my way in, early in November, they had disposed of 270 head of steers and were driving them in to Wetaskiwin, the nearest railway station, for shipment. Only one live spring was noticed in the whole township and is located on the northeast corner of section 30, in close proximity to the buildings and corrals of the ranchers. Their improvements consist merely of the most necessary buildings and enclosures to carry on their work economically. Their cattle graze principally in township 42, ranges 13, 14 and 15, during the open season, and in winter when the snow falls to any depth the cattle are all fed at the ranch. There is a great deal of standing water all over this township, every depression being full to overflowing, but I learn from the old timers that previous to the past four very wet seasons, little water was found except at the springs before alluded to. But a limited quantity of wood is available for the supply of fuel or for building purposes for prospective settlers, though I am informed that an inferior quality of lignite coal may be procured from the banks of Battle river about 10 or 15 miles to the southwest, also a limited quantity of building timber, such as poplar and to a smaller extent spruce. No stone or minerals of any description were met with, nor any fixed rock. Game, such as chickens and ducks is plentiful on account of there being so much water in the township. A trail traverses the township diagonally from the southeast to the northwest leading thence westward to Wetaskiwin on the railway and easterly to various ranches on Schultz lake and on Battle river.—*C. F. Miles, D.L.S., 1903.*

Township 45.—We left Wetaskiwin April 21, and took the Duhamel trail to Rosenroll (township 46, range 21, west of the fourth meridian), thence by Stony creek trail through township 46, range 20, to Driedmeat creek, which was crossed in section 14, township 45, range 19, just east of Heatherbrae. From Driedmeat creek we followed Iron creek trail to section 33, township 43, range 15, then struck across country in a northeasterly direction to the southwest corner of township 45, range 14. The trail from Wetaskiwin to Rosenroll and for several miles beyond was in very bad condition, the wagons in places sinking to the hubs in the mud. From there to Driedmeat creek the trail was much better, except at Stony creek, where the road descending into the ravine, through which the creek flows, was very soft. A snow storm which set in on

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 14.

the night of April 22 and lasted all next day did not improve it, and caused a delay of a day. Another delay occurred at Driedmeat creek owing to high water and a strong current it being necessary to ferry the outfit across in punts; from Driedmeat creek the trail was good. A shorter route would be due east from Rosenroll, passing north of Quarrel lake and thence southeast around the head of Wavy lake, but this trail was reported impassable. The soil in this township averages from 2 to 10 inches of black loam with a clay or clay loam subsoil and rates second and third class. There is more or less stone on nearly every section, but this appears to be all on the surface as none was found in digging the pits excepting at the northeast corner of sections 6 and 35, and at the quarter section post on the north boundary of section 12, where the subsoil was gravel. I would consider this township suitable for mixed farming. The surface is undulating prairie, with scattered clumps of willow brush and bluffs of small poplar. There are numerous sloughs and swales and in these and all low wet places there is considerable alkali; about one-third of the township is timbered with small poplar from 2 to 4 inches in diameter, in scattered bluffs principally in the southwest third of the township. This is fit only for fuel and fencing, there being no timber in the township large enough for building purposes. The grass in the sloughs is very coarse and unfit for hay, while that on the high ground in such places as are sufficiently free from stone to allow a mower to be used appears to be too short, although in a wet season it might possibly grow high enough to be worth cutting. There is no permanent supply of water in the township excepting in the northeast quarter of section 13, where Iron creek touches the boundary. The water in the sloughs is strongly alkaline and in the summer must be totally unfit for use if the sloughs are not dried up. There is no water-power of any description. The climate at this time of the year is extremely variable, one day being bright and warm and the next very cold. On the night of May 7 there was a hard frost which caused ice a quarter of an inch thick to form over the sloughs; on the 8th and 9th snow fell. The prevailing wind was from the north and northwest; I cannot say any thing as to summer frosts. The only fuel obtainable is small willows and poplar found mostly on the south and west portions of the township; should the township become settled the supply unless conserved will last but a short time. No indications of either coal, lignite or peat were seen. On the northeast quarter of section 13 on the banks of Iron creek is an out-crop of fine-grained limestone, but owing to position it was not possible to ascertain its extent. No minerals were noticed. No large game was seen, but feathered game is very abundant, such as prairie chickens, geese and ducks.—*Hugh McGrandle, D.L.S., 1903.*

Township 46.—For details of route, see notes of township 45, range 14. The soil is 2 inches to 10 inches of black loam, with clay subsoil. Undulating prairie very stony, with numerous willow swales. Sections 1 to 8 and 28 and 33 have scattered bluffs of poplar from 3 inches to 5 inches in diameter. There are no hay meadows, but a coarse grass grows in the shallow sloughs, mostly in the eastern part of the township. A small alkaline stream crosses the eastern part of sections 36 and 25, flowing in a southeasterly direction, also a small water course passes through 11, 12 and 1 in a southeasterly direction. No permanent supply of water. The weather in the first half of June was variable, dry with high winds, northwest winds prevalent. There was a white frost on the morning of the 9th instant. A very limited supply of poplar for fuel is available in the northern portion of the township. No coal or lignite was observed and no stone quarries, but there are loose scattered boulders. No minerals of economic value were found. No large game, but small game such as rabbits, ducks, geese and grouse is plentiful.—*Hugh McGrandle, D.L.S., 1903.*

Township 47.—This township as well as township 48, range 14, can be reached from Wetaskiwin by the Battleford trail. The soil north of the large coulee in the township is well adapted for cultivation, as well as the remaining portion comprising sections 3, 4, 5, 6, 7, 8, 9, 17 and 18, and can be utilized as grazing land. About half

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 14.

a mile on both sides of the coulee, the land is very stony. The bottom of this gully resembles the ancient bed of a river and is paved with stones. When rain is abundant a creek runs into it towards the southeast. A few ponds and hay marshes are found on sections 15, 28, 29, 30, 31 and 33. The water is good in every one of them. The marshes produce a large quantity of very good hay and there are also a good number of sloughs. There is no water-power in the township. Poplar bluffs containing timber varying from 3 to 5 inches in diameter and rather small for building are found on sections 17, 18, 19, 20 and 29. This township is mostly prairie and bluffs. The eastern portion is undulating while western sections are rolling. The climate is good with no summer frost. There are no indications of coal, no stone quarry and no minerals. The timber found here is only fit for fuel, and is scattered all through the township. A few deer, porcupine, foxes, prairie wolves, badgers and hares are found. The feathered game consists of geese, ducks of different species, partridges and prairie chickens. This township presents a very fine aspect, with its different bluffs and high ridges. There will be no difficulty in making roads in any direction through this township. No doubt, settlers will find it profitable and agreeable to locate here.—*J. B. Saint-Cyr, D.L.S., 1903.*

Township 48.—This township can be reached from Edmonton or Wetaskiwin by the Battleford trail. There is also a road from Edmonton via Fort Saskatchewan, and Vegreville, but this road starts from Wetaskiwin. The soil of the western portion of the township is well adapted for farming, the remainder is mostly composed of a few inches of black sandy loam resting on hard clay and very stony in many places. As grazing land, it is fair. On sections 6, 7 and 8, there are bluffs of green poplar varying from 3 to 5 inches in diameter. The rest of the township is prairie and bluffs. Large hay marshes are found on sections 5, 12, 15, 17, 18, 22, 23 and 25. The sloughs are very numerous in this township. Hay is abundant in every one of these marshes, and good water is found in them; very few sloughs contain alkaline water. There is a good sized creek crossing sections 13 and 23, flowing north from one marsh to another. There is no water-power in the township. The climate seems to be good with no summer frost. Poplar for fuel can be procured from the western part of the township. There is no coal, no stone quarries and no minerals. The game found consists of a few deer, foxes, prairie wolves, porcupines, badgers and hares. The feathered game is mostly wild geese, ducks, partridges and prairie chickens. The Battleford trail crosses this township from east to west, about a mile south of the north boundary of sections 31 to 36. The country is generally rolling all through the township; good roads can be made in almost over any direction. The poplar found here is hardly large enough to build with, and is only fit for fuel.—*J. B. Saint-Cyr, D.L.S., 1903.*

Range 15.

Township 36.—The surface is principally undulating prairie, with deep ravines (or dry watercourses) heading eastward towards the lake. There is a flat from 40 to 60 chains in width lying along the west side of Sullivan lake in this township. It is considerably cut up with dry watercourses, but the soil is fairly good. Along the rim (west of this flat) there appears to have been a large quantity of coal burnt at some period, as the surface is of burnt clay piled up in all shapes from 30 to 80 feet high. The soil is mostly clay loam, with very hard clay subsoil, and is suitable for mixed farming or ranching. No timber worth mentioning. Some willow and young poplar along the ravines and rim. The most readily available fuel is poplar timber 8 or 10 miles to the northwest. I noticed some outcroppings of coal on the northeast quarter of section 19, but I believe coal could be found all along this rim described above. There is a creek of fresh water running through the southwest corner of the township, which apparently goes dry in dry seasons, with the exception of the deep holes along it.

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 15.

There is fresh spring water soaking out of the banks of these ravines, but the water in Sullivan lake is no good. It is just like Gough lake, clay coloured and alkaline. There is plenty of good upland hay, but there are not as many hay sloughs in this part as there are in the vicinity of Gough lake. The east boundary of section 7 runs through a good sized slough which lies in the southeast quarter of 7 and the southwest quarter of 8, and another large one in the southwest quarter of section 6. There is no water-power, ore, stone quarries, or anything of marketable value except the above described outcropping of coal. The climate is similar to any other section of Alberta. The first frost was in September. Large game is scarce. Some coyotes and porcupine, but any amount of geese, ducks, prairie chicken, snipe, plover and some swans. This township (or Sullivan lake) can be reached by a fair road from Blackfalds station on the Calgary and Edmonton Railway. This trail runs east on the north side of Red Deer river and crosses Tail creek near its confluence with that river, from there bearing a little south of east to the north arm of Sullivan lake.—*A. McFee, D.L.S., 1903.*

Township 37.—This township is easily reached, as the main trail from Red Deer to Battleford passes through the northerly half. The soil in the northerly portion is a good black sandy loam, and is suitable for agricultural purposes. That in the middle portion is a mixture of black loam and hard clay, and ranks as second class land, while the land included in the lower portion is entirely unfit for agriculture, and on account of the poor grasses is not much good for grazing purposes. The surface is open rolling prairie, with bluffs of poplar and willows in the northeast quarter. The timber is small poplar and only fit for fuel. Hay is found around the sloughs. Fresh water can be had from a few small creeks and from the sloughs. Fair water can be obtained from the lake on the easterly boundary. Sullivan lake, which extends about a mile across the southern boundary, contains poor muddy water. There are no rivers, waterfalls or water-powers in the township. Coal can be easily obtained along the banks of a small creek running southwards through sections 19, 18 and 7. No other minerals or stone quarries were noticed in the township. Ducks, geese and prairie chickens are in abundance around the lakes.—*Joseph A. Carbert, D.L.S., 1903.*

Township 38.—This township can be conveniently reached, as the main trail from Red Deer to Battleford passes through the southeasterly portion. The soil is a good black sandy loam, varying in depth from 6 to 10 inches, with a good clay subsoil, and is suitable for agriculture and grazing purposes. The surface is mostly rolling prairie with bluffs of poplar throughout the township. The timber is small poplar and is only useful for firewood. Good hay is found around the numerous sloughs. Water is found only in the sloughs and a lake which enters the township in the southeast corner. There are no rivers, falls or rapids in the township. Very little wood is available for fuel, but abundance of coal can be easily obtained in the adjoining township south. No stone quarries or minerals were found in the township. Ducks, geese and prairie chicken abound around the lake and sloughs.—*Joseph A. Carbert, D.L.S., 1903.*

Township 39.—The railway can be reached from this township either by going south seven or eight miles to catch the trail to Blackfalds or by following the track which passes by Stocking and Travers' ranch and goes west towards Lacombe, passing through the Willow creek settlement. Or again, by following direct on the correction line, where, however, there is no track, to the intersection of the trail to Blackfalds on section 36, township 38, range 20. This correction line offers no impediment to travel. The northern part is isolated from the remainder by the Paint-earth creek, which is actually crossed on a bridge situated on the northwest quarter of section 23, facing Whitebeck's ranch. South of Paint-earth creek there is only one place north of section 6 where it is possible to cross with wagons or even horses, the branch of this creek which comes from the south, and that place is on section 18. North of the valley of the Paint-earth there are some extensive prairie patches, but south of it timber bluffs occupy some space. Timber is comparatively plentiful in this part of the township.

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 15.

The valley of the Paint-earth, 200 feet deep, is nothing else than a sea of mounds from 30 to 100 feet high, as can be seen by the sketch of the township; it is cut by a number of coulees, which make communication difficult. The timber is mostly poplar and willows, with some small birch and a few spruce in the valleys of the branches of the Paint-earth. Hay was good all over the country. The water in the creek and in the sloughs in the township was good, but in dry seasons the whole of the sloughs and streams would dry up. No water-power exists. Climate is good. There is plenty of fuel for a few years from the bushes in the township, and there is coal on section near the track going to Whitelock's. It was on fire this summer. I have seen no stone nor any minerals of value. Prairie chicken and ducks, a few stray antelopes or deer and some wolves are the only game to be found. Of course, there are many good patches of first class land in this township, but outside of the most southern part its broken surface will for the present be a drawback to the settling of it, and yet I have seen good farming done in worse places than this, and I am far from believing that one day this township will not be one of the prosperous ones of the region.—*George P. Roy, D.L.S., 1903.*

Township 40.—The best route for reaching the township is by starting from Wetaskiwin and travelling by the road passing by Meeting creek. The road is not in good condition. The soil is fairly good and is here classified as first, second, third and fourth class. The greater part, however, is broken by gulches and ravines running from Battle river. The soil is suitable for either farming or stock-raising, especially the latter. The surface of the township is much broken by the valley of Battle river and tributary gulches and ravines and also to some extent by Paint-earth creek. The southwestern corner is comparatively open and the remainder thickly covered by bluffs of poplar. The timber on the high ground is small and only suitable for firewood, but a considerable amount of good building timber, both spruce and poplar, can be obtained along the river. There are a number of good hay sloughs and meadows scattered over the township, affording good wild hay. The surface swamp water is fresh, but probably not permanent. Most of the springs in the ravines are alkaline. Battle river traverses the whole township. It is one and a half to two chains wide and from three to ten feet deep. The current is about a mile and a half per hour. The adjacent lands are not liable to floods from the river. Natural water-power is not available and I should judge that it could not be developed by the construction of dams. The climate is pleasant. No summer frosts were observed. One good coal seam, six feet wide, was observed in the northwest quarter of section 14. Indications of coal were seen elsewhere along the banks of Battle river and good seams could probably be opened up. Sandstone and limestone show along the bank of the river. Clay ironstone was also seen in the same locality associated with the lignite coal. Ducks, geese, swans, sandhill cranes and prairie chickens are plentiful and there are also quite a number of deer.—*Thomas Drummond, D.T.S., 1903.*

Township 41.—This township is comparatively easy of access by a fairly good trail from Wetaskiwin, a station on the Calgary and Edmonton Railway, and is about 85 or 90 miles distant from that town. The soil is generally first class, consisting of a black loam varying in depth from 4 to 12 inches, with in most places, a clay subsoil, excepting in the northern central part of the township where alkaline clay appears to predominate. Judging by the growth of the grasses and young trees, the soil must be considered fairly productive. The land is fairly level and consists in part of open prairie (more particularly confined to the central northern portion) and prairie dotted with numerous groves of second growth poplar and willow, which are most numerous and dense on the southeastern quarter of the township. There are a great many ponds, those in the northerly half being strongly impregnated with alkali. There the land rises slightly to the east and the west, the highest land being apparently the most productive. Considerably more timber exists in this township than in the one to the

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 15.

north, but the larger timber, although still standing, has been nearly all fire-killed and a new growth has sprung up, not yet attaining its full size, probably not exceeding 4 or 5 inches in diameter, nearly always intermixed with a dense growth of willows. I would estimate the wooded area of this township to be about 15 or 20 per cent of the whole. Depressions in the soil, marshes and meadows and ponds were all full to overflowing. In dry seasons, many of the present ponds may make good hay meadows, but at the present time contain too much water to be utilized for that purpose. Good hay can be cut on the high lands, though not in such quantities as the hay meadows might yield. As regards climate, the season was too unfavourable to justify me in stating anything definite owing to the heavy rains that prevailed during the greater part of the summer. The first frosts were experienced in the beginning of September in this vicinity, but some heavy hail storms that we had near the end of July, while in the hills, were not noticed here. The dry standing timber (poplar) may be utilized as fuel for a limited period, after which lignite coal may be procured from a seam on Battle river a short distance south of this township. Very little stone of any kind was met with and no fixed rock of any description. Game, such as prairie chickens, ducks and rabbits abound. Deer are also said to be here, and in fact were seen by some members of my party in the adjoining township to the east.—*C. F. Miles, D.L.S., 1903.*

Township 42.—This township is easy of access by a trail from Wetaskiwin, a town and station on the Calgary and Edmonton Railway, about 80 miles distant by trail via Heatherbrae, 40 miles distant, a small settlement containing a store, a blacksmith shop and one hotel. Along the trail numerous settlers are to be met with. The soil is first class, consisting of a black loam varying to a depth of 12 inches and generally underlaid by a clay subsoil. This clay subsoil varies greatly in many instances, it may be what is commonly called hardpan, or it may be clay that might be worked comparatively easily by exposure to the air for a certain length of time, however, the nature of the grasses and growth of pea-vine indicate sufficient elements in the soil to produce good crops under certain conditions. This township is fairly level or flat, more particularly is this the case with the central southern half, a considerable portion of which is covered by ponds and marshes at this time of the year. Towards the east and west the ground is rising gradually, the higher land being covered by numerous groves of young poplar, the old ones, fire-killed, being left standing in many places. Few, if any, green trees of greater dimensions than 8 inches in diameter were seen. Ponds surrounded by dense willows are very numerous. Probably ten per cent of the whole area is covered by second growth poplar and willows. Although at the time of my survey every depression was filled to overflowing with water, making it difficult to ascertain the township's facility for supplying hay, yet I am under the impression that in ordinary seasons plenty of hay may be procured from both high and low lands. This being an exceptional season, I learned, and saw from my own point of view, that the ponds, commonly called sloughs were too full of water and that therefore, both the farmers (settlers), and ranchers were compelled to cut their hay from the high land. As an indication of tall grass, I may say that I had occasion to cross several marshes, one on the north boundary of section 9 and the other on section 14 (east boundary), where the grass in about 5 feet of water nearly hid a wagon driven through, and completely hid the chainmen chaining along the former line. Water at time of my survey was very plentiful, although I am informed by a rancher that up to last summer, all the ponds and sloughs were dry. The water found on the higher lands was fairly good, whereas that in the flats was more or less alkaline. A large marsh nearly covers the greater parts of sections 23 and 14 and portions of sections 11 and 12. Also section 9 is mostly covered by water at the present time, and to a less extent sections 3 and 4. A small lake covers part of section 8, which I traversed, but I am under the impression that it may not be permanent. No running water was found, except an overflow from

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 15.

one pond to another. After about two months' experience I would consider this township better adapted for grazing purposes than for the raising of cereals, but the past season having been an exceptional one, it is possible future seasons may be more favourable for raising grain crops. No frost was experienced until the beginning of September, but there were several heavy hailstorms in July and August. For a year or two settlers may procure sufficient dead timber (fire-killed), but ultimately the fuel supply may be brought from some coal seams said to be exposed on Battle river, about 7 or 8 miles to the south of this township. Very little stone of any kind was met with, and no fixed rock of any description. Game, such as ducks and prairie chickens is very plentiful. Deer were also seen.—*C. F. Miles, D.L.S., 1903.*

Range 16.

Township 1.—This township is better adapted for grazing than farming as the soil is a light sandy loam, and the surface rolling prairie. It is watered on the south by Red creek and on the east by Macklin lake. There is no timber or scrub in the township.—*G. J. Lonergan, D.L.S., 1902.*

Township 36.—The alluvial soil in this township is clay or black loam, and the subsoil very hard clay. It has a heavy coat of grass. The township is suitable for stock raising or mixed farming. There is no timber worth mentioning; the sloughs have a fringe of young poplar and willow around them and there are some scattered clumps of willows all through the township. The surface is rolling or undulating. Upland hay could be cut in almost any part of it, during these past wet seasons. There are also a number of small hay sloughs or meadows that are at present filled with water, but a good many of them could be easily drained so that they would produce a large quantity of good blue joint and slough hay. There is a creek running through the eastern part of the township which empties into Sullivan lake, and has a few small tributaries that run in coulees from 10 to 4 feet deep and are fed by small springs along the banks of these coulees. They all take their rise in this township and have good water in them but not permanent, excepting in holes. There are no water-powers. As for fuel there is a coal seam on section 8, three feet thick, but no wood worth mentioning nearer than eight miles in a northerly direction. The only stone I noticed was a few granite and sandstone boulders along the coulees. There are no minerals of any value. Small game is plentiful such as ducks, geese, prairie chickens, snipe, &c. The best route to reach this section of the country is by a fair trail from Blackfalds station on the Calgary and Edmonton Railway, on the north side of Red Deer river, which runs eastward crossing Tail creek (which has a good bridge over it) near its confluence with that river, then runs a little south of east, close to Sullivan lake. The first frost I noticed in this section of the country was in the last week in September. I noticed signs of hail storms in places. The climate seems to be similar to the rest of the district.—*A. McPhee, D.L.S., 1903.*

Township 37.—This township adjoins the main trail running from Lacombe and Red Deer easterly to Battleford. The soil is a very hard clay with scarcely any depth of mould and is classed as third class land, and is not suitable for agriculture. In wet seasons this land would be good for grazing purposes. The surface is open rolling prairie. There is no timber in the township. A considerable quantity of hay could be procured from the numerous sloughs. The hay sloughs furnish good water. A creek with a good current and about 10 to 12 feet wide and from 2 to 4 feet deep runs easterly through sections 21, 22, 23, 24, 25, 26 and 27, and contains good drinking water. There is no water-power in the township and no timber or fuel, but soft coal can be easily obtained in adjoining township to the east. No stone quarries or minerals were found in the township. Game appears to be scarce. No settlers or squatters were found.—*Joseph A. Carbert, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 16.

Township 38.—This township can be reached by a well travelled trail which runs easterly from Lacombe and Red Deer stations on the Calgary and Edmonton branch of the Canadian Pacific Railway to the Nose and Neutral hills, and thence to Battleford. The soil in this township is a black sandy and clay loam, varying from 4 to 10 inches in depth, with a good clay subsoil, and is ranked as second class land. Vegetation is good. Although now used for grazing purposes a large portion would be suitable for agriculture, and a desirable place for settlement. The surface is undulating prairie, with scattered bluffs of second growth poplar and willow. There is no timber in the township. Hay could be cut from mostly all the sloughs and throughout the township. Water is mostly fresh, and can be easily obtained from the numerous hay sloughs, also from Bigknife creek, which runs through the northwestern portion of the township. The land is not liable to be flooded. There is no water-power in the township, and no wood of any account, but soft coal can be obtained in the adjoining townships. No stone quarries or minerals were found. Game is scarce. There are no settlers in the township.—*Joseph A. Carbert, D.L.S., 1903.*

Township 39.—This township is mostly prairie, with quite a few willow and poplar bluffs, which, however, are neither numerous nor extensive enough to be a drawback to the settlement of the country. The soil, mostly a bed of 8 to 10 inches of black loam over a clay subsoil, is fairly good, although inclined to be very hard in dry seasons. The surface is mostly rolling, with knolls here and there, especially in sections 8 and 9, where the ground is slightly hilly. This township is the starting point of a certain number of coulees, which though of very little consequence, in the south part of the township get larger and deeper as they go northward; so much so that sections 25, 26, 27, 34, 35 and 36 may be considered as broken and hilly country, especially section 36. The timber, mostly poplar, is of very little consequence, measuring hardly 6 or 7 inches in diameter. However, building material can be found on the branches of Paint-earth creek, situated in township 39, range 15, where quite a few spruce exist. The water in the sloughs is generally good, as well as in the creeks which flow through the township. Ducks and prairie chicken are about all the game in the country, although I have seen a couple of antelope, but it appears that this is an exception. At the present time, of course, coyotes are numerous. There is no regular trail in the township, but there is a track to the main travelling trail going to Red Deer, which crosses the township south of this one, and by going west it is easy to find the track going to Willow Creek settlement, from which there is a good trail to Lamerton and Lacombe.—*Geo. P. Roy, D.L.S., 1903.*

Township 40.—The best route for reaching this township is by way of Wetaskiwin, but the road is not in good condition. The soil as a whole is fairly good, and it is booked mainly as first and second class. The best soil is that which is more or less covered with scattered bluffs of poplar and willow. It grows the ordinary vegetables and garden products, such as potatoes, turnips, cabbage, cauliflower, lettuce, &c., and also wheat, oats, barley and rye. It is suitable either for farming or ranching. The surface is fairly level, except along or near Battle river, where it is cut up more or less by ravines and coulees. About one-half of this township is open, and the remainder is covered with bluffs of poplar. The southwestern portion is open prairie. The timber is poplar, and on the high ground it is all small and only useful as firewood. Large poplar, 8, 10 and 12 inches in diameter is found in the valley of the river. Hay swamps, sloughs and meadows are plentiful, and they are scattered more or less over the whole township. The surface water in swamps is plentiful and fresh, but is probably not permanent. The following streams traverse a part of the township: Paint-earth creek, Cutknife creek and Battle river, and there are several permanent springs. Paint-earth creek traverses the full width of the township along the south. It is about 10 feet wide and 3 to 6 in depth, and has a sluggish current. The water is good. Cutknife creek cuts into the township along the north boundary for a short distance. It

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 16.

is about the same size as Paint-earth creek, but the current is swifter and it has a greater volume of water. The water is fresh and good. Battle river averages one and a half to two chains in width, and it is from three to ten feet in depth. It has a current of about one and a-half miles an hour. The land is not liable to be flooded by these streams. I should judge that the fall is not sufficient to develop water-power. Poplar is the available fuel, and it is scattered more or less over the township. Indications of lignite coal and clay ironstone are found along the cut banks, but no workable seams were discovered. Impure limestone and soft sandstone also occur along the river. Ducks, geese, sandhill cranes, swans and prairie chickens are plentiful, and there are also a few deer, locally known as jumping deer.—*Thomas Drummond, D.T.S., 1903.*

Township 59.—The trail from Edmonton to Saddle lake runs through the south-east corner of this township. The soil is generally sandy, though there is a percentage of it with clay subsoil. The sections from 1 to 12 are of little value, being mostly sandhills and muskegs. A belt of good land crosses the township from sections 10 to 20, and is suitable for mixed farming. About 50 tons of hay could be cut along the river, besides smaller patches here and there all through the township. About one-tenth of the township is open undulating prairie; three-tenths of it is covered with heavy scrub, and the rest is covered with cottonwood, poplar and jackpine; the latter prevails in the southern part. The timber has no commercial value except for the use of settlers. The White-earth river is a stream about 50 links wide, 3 feet deep, and flows at the rate of about 4 miles an hour from the northwest to the southeast corner of the township in a deep valley. Another stream crosses sections 34 and 27 to join the White-earth river, and is about 35 links wide, 3 feet deep with a current of 3 miles an hour. Two other smaller creeks join the White-earth in the township. All the water is fresh. There are no water falls. There is good fuel all through this township, consisting of poplar, cottonwood and jackpine. There is no coal, no minerals and no stone quarries. There is very little game, except a few wild chickens.—*J. L. Côté, D.L.S., 1903.*

Range 17.

Township 35.—The route for reaching this township is by a well-beaten trail, which runs eastward from Blackfalds station (on the Calgary and Edmonton Railway) along the north side of Red Deer river, crossing Tail creek near its confluence with that river, then in a southeasterly direction, keeping to the north of Gough lake. Soil is black and clay loam, with very hard clay subsoil. This township is suitable for mixed farming or ranching, as there is an abundance of grass. There is some poplar timber on sections 19, 29, 30, 31 and 32, in patches or bluffs (none of it over 7 inches in diameter and a lot of it fire-killed), intermixed with heavy willows. The rest of the township is chiefly open prairie, excepting the numerous sloughs and pot-holes that are fringed with willows and young poplar. There are no permanent streams in the township and all permanent lakes or ponds are filled with brackish or alkaline water; all pot-holes and sloughs have at present from 3 to 4 feet of fresh or rain water in them. There is no water-power. As for fuel, there is some dead poplar about the northwest corner of the township and a seam of coal on section 8, township 36, range 10. The only stone I noticed was sandstone and granite boulders around the lakes and ponds. I discovered no minerals. Small game is plentiful, such as geese, ducks, chicken, crane, snipe, &c. Any amount of upland hay could be cut during the past four or five wet seasons, but not in the meadows, on account of their all being filled with water from 1 to 4 feet deep. There are large hay sloughs or meadows situated on sections 10, 14, 15, 16, 25, 26, 33 and 34, besides several small ones scattered over the township, where in dry seasons any quantity of fine blue joint and slough hay

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 17.

could be got. The climate seems similar to the country about Edmonton. The first frost I noticed was in the last week of September. There is a small portion of the northwest quarters of sections 19 and 31 and of the northeast quarter of section 32 in Gough lake and a portion of sections 35 and 36 in Cutbank lake. This last is a crooked lake of over 4 miles of shore line, and is fed by springs that lie in section 1, township 36, range 17, and sections 7 and 8, township 36, range 16. It has a small outlet flowing into Gough lake through the southern part of township 36, range 17. The lake has 10 feet of brackish or alkaline water and has cut banks from 3 to 15 feet high.—*A. McFee, D.L.S., 1903.*

Township 36.—The southwest corner of the township is considerably cut up by Gough lake. There is a boggy, sluggish creek of fresh water with a current of about 10 or 15 chains per hour which takes its rise from some lake situated in the next township, to the north, flowing south through sections 33, 28, 21 and a portion of 16, 15 and 10 and across 9, emptying into Gough lake in 8 and which flows the whole distance through and about the centre of a large hay marsh from one-half mile to one and a half miles wide, which is at present covered with from 1 to 3 feet of water, and has a strong growth of fine blue joint hay all over it. It is flooded on account of the water being so high in Gough lake during the last few years. The best route to reach this township is by a road that runs east from Blackfalds station on the Calgary and Edmonton Railway, along the north side of Red Deer river and crosses Tail creek near its confluence with that river. From there by a trail running in a southeasterly direction to the north end of Gough lake. The top soil is black on clay loam, with very hard clay subsoil, and is suitable for mixed farming or stock-raising. Surface is mostly undulating prairie, with no timber, excepting some willow around pot-holes and sloughs. Any quantity of upland hay could be found and I would judge in dry seasons thousands of tons of blue joint hay could be cut on the above described hay marsh. Cutbank lake situated in sections 1 and 2 in this township, and 35 and 36, township 35, range 17, has about 10 feet of the same kind of water as Gough lake; (clay coloured and alkaline). There are no water-powers, minerals or stone quarries; but around the lakes there is a quantity of granite and sandstone boulders. The first frost I noticed in this section of the country was in September. Timber for fuel can be procured some 8 or 10 miles to the north, and there is a coal seam on section 8 in the next township east. Large game seems to be scarce, the largest wild animals I have seen being the coyote and porcupine, but small game is in abundance, such as prairie chickens, geese, swans, snipe, plover, &c. The climate seems similar to any other part of this section of Alberta. What ranchers are in this section of the country have not as yet started to raise any grain, but I have seen some fine potatoes and turnips that were raised here.—*A. McPhee, D.L.S., 1903.*

Township 37.—The main trail from Red Deer to Battleford passes along the northerly boundary of this township. The soil is mostly a hard clay substance, the alluvial soil having been burned off by repeated fires. The upper one-third of the township is a black loam ranging from 6 to 12 inches in depth, with a clay subsoil, and is ranked as second class land. The lower two-thirds is of a hard clay nature, with some alkali spots, and ranks as third class. The township is only suitable for grazing purposes. The surface is open, undulating and rolling prairie. No timber of any size or quantity was found throughout the township. There is an abundance of good hay around the numerous hay sloughs. Two large lakes are situated in this township. The one in the western portion, called Island lake, is shallow with small islands, but the water is very muddy and alkaline, and entirely unsuitable for drinking purposes. The other called Shooting lake occupies the more central portion of the township. It is a deeper lake than the former one and contains good clear fresh water. There are no rivers, falls or rapids in the township. Fuel is especially scarce; coal, however, can be had in the adjoining township to the east. There are no stone quarries or

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 17.

minerals in the township. Ducks, chickens and geese are found in abundance around the lakes.—*Joseph A. Carbert, D.L.S., 1903.*

Township 38.—This township is reached by the trail coming from Blackfalds, which passes through the township south of this one. It is also reached by the trail from Lacombe, through the Willow settlement, in township 39-18, as I have noticed people travelling east from that point. These roads are fairly good, except during long and excessive rains. The soil is generally either a thin coat of black loam or sandy loam on a clay subsoil, very much inclined to bake, and into which wooden posts and even iron posts are hard to drive. The township is mostly prairie, with scattered bluffs of small poplar and willows of no consequence either for fencing or for building purposes. The water in the sloughs is generally good, as well as that in Bigknife creek or its branches, which have their source within this township. This creek is about 4 feet wide and 3 feet deep where it crosses the correction line. There is no power available on any of the creeks. Climate is as good as in any part of this region. I did not see any available fuel in the township, but coal can be had either from Contentville, at the bend of the Red Deer, or from section 19, township 38, range 15. There were no stone quarries nor any minerals. Game consists of prairie chicken and a few ducks. There was a shack built on the southwest quarter of section 34, but I did not happen to meet the squatter to whom it belonged, and I have heard that he has left the place. There are no ranchers in the township as slough hay is scarce, although the upland hay is good in these rainy seasons.—*Geo. P. Roy, D.L.S., 1903.*

Township 39.—This township is mostly rolling prairie, with scattered bluffs of poplar and willows; not a great many sloughs. It rises from the south line towards the centre, and from there slopes to the north. On the two tiers of sections from 12 to 18 and from 19 to 24 the valley of Bigknife creek, which crosses the township diagonally, is bordered by high banks 40 feet high, very steep in some places, so much so that with the buckboard places to reach the bottom are far apart. Bigknife creek is a stream about 4 feet deep, 10 feet wide, and in the part I just mentioned the banks are about 10 feet high. The soil is fair, but in the centre I was dubious as to the classification: it is not altogether second class soil. Settlers were flocking into the western half when I completed the survey. I noticed a shack on section 18, and a house and barn near the line of sections 30 and 31. However, the settlers made no declarations. The township is reached from Lacombe by the road passing through a growing village about the centre of township 39, range 16. The trail from Blackfalds and Red Deer runs through township 37, about 7 or 8 miles to the south. However, the main thoroughfare of this country in the future will, I believe, be the road on the correction line, which offers no serious impediment to travel and is the most direct line to the railway.—*Geo. P. Roy, D.L.S., 1903.*

Range 18.

Township 25.—This township is situated about 50 miles from Gleichen. The road is fair; rather hilly but dry. The soil is hard clay and produces good grass. The surface is rolling prairie, cut up by deep ravines. There is no timber nor hay nor minerals. It is well watered by the Red Deer, which would be navigable for small boats. Willow creek, about 20 feet wide and 1 foot deep, contains good water. The climate is apparently dry. Coal for fuel will probably be found along the banks of the Red Deer. The only game I saw was grouse.—*J. E. Woods, D.L.S., 1903.*

Township 35.—A large portion of this township lies in Gough lake, a shallow lake with clay coloured alkaline water, having no outlet I could discover, but with a couple of streams of fresh water emptying into it. There is another small lake in the northwest quarter of section 7 which has the same kind of water (clay coloured and alkaline). A portion of sections 18, 19, 20, 29 and 30 are rather rough and hilly, with a

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 18.

great number of pot-holes fringed with willow. The rough portions of these sections may be described as follows: Beginning on the west boundary of section 30, running south to near the centre of section 18, then in a northeasterly direction to a point near the lake in the southwest corner of section 28, thence to the place of beginning. The best route to reach this township is by a trail which runs eastward along the north side of Red Deer river from Blackfalds station on the Calgary and Edmonton branch of the Canadian Pacific Railway, and which crosses Tail creek near its confluence with Red Deer river, thence in a northeasterly direction over a fair trail. The country is open prairie with no timber, only some willow around the sloughs and pot-holes, and most of it is suitable for mixed farming or ranching. The only hay meadows in this township worth mentioning lie along the south boundary in section 1 at the south end of Gough lake, both blue joint and slough hay. Any quantity of upland hay could be got during these wet seasons anywhere in this part of the country. There is only one small stream in this township, which flows in a southeasterly direction through sections 32 and 29, and empties into the lake in 28. It is fresh water but not permanent. No water-powers, minerals or stone quarries in the township. The only stones I noticed were sandstone and granite boulders on the hills and along the lake shore. There is some timber in the township adjoining to the west, which is the most convenient fuel. Large game is scarce, but any amount of small game such as geese, ducks, chicken, plover, snipe, &c., is found. The soil is clay or black loam on top with very hard clay subsoil.—*A. McFee, D.L.S., 1903.*

Township 36.—The soil is mostly clay loam with very hard clay subsoil, in places it might be called hard-pan. Surface, open prairie with a great number of sloughs and pot-holes, fringed with willows and young poplar, and at present are all filled with water, but I would judge to be all dry in dry seasons; there is only one stream in this township with a couple of small tributaries. It runs through section 6 and the southwest corner of section 5, good water, not permanent, current $\frac{1}{2}$ mile per hour, 5 feet wide, 1 foot deep, banks 5 feet high. Gough lake covers the greater portion of sections 1, 12, 13 and 24 and is a shallow lake with dirty alkaline clay coloured water, and low banks not over 5 feet high on any part of it with some sand stone and granite boulders along the shore, these being the only stones I noticed in the township. I saw no coal or minerals of any value and no timber worth mentioning. No water-power exists; small game is plentiful such as prairie chicken, ducks, geese, snipe and some swans. The east boundary of sections 5, 8, 23 and 27 runs through some fine meadows, with blue joint and slough hay, and there are a great number of grassy sloughs where large quantities of hay could be cut in dry seasons that have from 1 to 4 feet of water in them at present. A portion of sections 23 and 24 is liable to be flooded to the depth of 18 inches as there is 12 inches over it at present. There is some timber suitable for fuel on the east side of Gough lake, in township 35, range 17, west of the fourth meridian, and also a seam of coal on section 8, township 36, range 16, west of the fourth meridian. The northwest corner of the township is very rolling, the balance is mostly undulating and as a whole is suitable for stock-raising or mixed farming. The best route to reach this township for any part of Gough lake is by a well-beaten trail that runs eastward from the Calgary and Edmonton railway along the north side of Red Deer river, which crosses Tail Creek near its confluence with that river. From that point, there are two fair trails, one bearing southeast and the other more easterly. The nearest railway station is Blackfalds, but there are no trails connecting with Wetaskiwin, Lacombe, Red Deer and Innisfail. The first frost I noticed was in the last week of September.—*A. McFee, D.L.S., 1903.*

Township 37.—The main features of this township are the two large lakes in it, Lonepine lake in the northwest corner and Marion lake on the east boundary. Part of sections 31 and 32 are covered by Lonepine lake while the waters of Marion lake cover parts of sections 12, 13, 14, 15 and 22 and nearly the whole of 23 and 24 in which

4-5 EDWARD VII., A. 1905

TONWSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 18.

the larger island which I surveyed is situated and then parts of 25, 26, 27 and 34. There are two smaller lakes, part of Beltz lake on section 30 and Hebert lake on sections 19 and 20. The township may be reached by the trail from Blackfalds running through township 38, range 18. There is also a trail running westwards towards Red Deer from Whiteside's ranch in section 17. The topography of the country shows no great irregularities. From the north outline, the surface slopes to the south to the bottom of the valley between Lonepine lake and Marion lake. From there, the ground rises gradually to the north line of sections 7 to 12 and beyond this it is either level or slightly inclined to the south. The soil in the valley between the lakes is not very good, the alluvial soil being generally thin, and the subsoil a hard clay inclined to bake. South of this valley for about two miles, the surface is strewn with large quantities of small boulders. These, however, are more scarce towards the southern part of the township. Only one rancher is settled in this township. The valley between the two large lakes is open prairie but outside of this, bluffs of poplar and willow are met with throughout the township, except in the southern part where only scattered bunches are seen. In Marion lake, there is a range of islands running southwesterly across section 24 and then south on section 13. These islands appear to be the summit of a ridge which divides the lake into two basins.—*Geo. P. Roy, D.L.S., 1903.*

Township 38.—This township for farming purposes is one of the best which I have surveyed this summer. The soil is fair and the surface slightly rolling; contains neither rough nor hilly places. It is reached from Lacombe, Red Deer or Blackfalds by the trail going through Coutanville at Tait creek, the said trail crossing the township in a southeasterly direction. There is quite an amount of brush and poplar up to 9 inches diameter in the two southern tiers of sections. Further north the bluffs are scattered and near the correction line they are few and small. Two ranchers were squatted on this township at the time of the survey, Jos. Harbison on sections 2 and 3, and Wells occupying M. Bennett's premises covering part of sections 8, 9, 17 and 18. About the time that the mounding of this township was completed the advance guard of some Swiss settlers appeared on the ground and finding the country to their I have not seen any quarries, minerals, water-powers or game.—*J. E. Woods, D.L.S.,*

Range 19.

Township 27.—This township is reached from Gleichen by a fair trail, rather hilly but dry; the distance is about 45 miles. The soil is principally clay with patches of black loam. It would be well adapted to farming if it could be irrigated, for the present it is only fit for grazing purposes. The surface is rolling prairie. There is no timber in this township, nor hay meadows. There are a few small creeks in the western part of the township running in deep ravines; they are all spring water. Whey lake on sections 9, 10, 15, 16, is alkaline. Two-bar lake on section 2 is apparently fresh water; these lakes are permanent ones. The climate is apparently very dry; it is quite probable there are summer frosts. On the north boundary of section 10 the pits at the quarter section are dug in lignite coal much weathered by exposure. I have not seen any quarries, minerals, water-powers or game.—*J. E. Woods, D.L.S., 1903.*

Township 28.—This township is reached from Gleichen by a fair trail, rather hilly but dry; the distance would be about 50 miles. The soil is a hard dry clay which would produce good crops with irrigation. The surface is all prairie with a few patches of willow and poplar scrub on the sides of coulees facing the north. This township is very badly broken up by deep coulees. by the valley of Red Deer river and the valley of Rosebud river, which are found 400 to 500 feet deep. They are generally formed by cut banks rendering travelling with horses

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 19.

and wagons almost impossible. There is a little bunch of poplar and cottonwood fit for fuel where the north boundary of section 21 crosses Red Deer river. The township is well watered by the Rosebud and Red Deer rivers, the former in low water would not be more than 25 feet wide and mostly in pools in very dry seasons. The Red Deer appears to be navigable for small steamers. There are no water-powers, stone quarries, hay land or minerals other than coal. There are indications of coal all along the rivers and in some places seams are burning underground. Most of the valley of the Red Deer is filled with hills and knobs of red shale coloured by the iron being oxidized during the burning of the underlying coal seams. There are a few deer along the river valleys and an abundance of prairie chicken. The climate is apparently very dry and winter sets in early.—*J. E. Woods, D.L.S., 1903.*

Township 38.—The surface of this township is rolling. The general incline of the ground is toward the south in the north part of the township, but in tiers of sections from 19 to 24 it rises and for the rest of the township it slopes to the south. The soil is good, being in most cases a heavy coat of black or sandy loam over a clay subsoil. There is quite a quantity of poplar and willow in the township. Large patches of prairie are met with, but sections 1, 2, 3, 10, 11, 12, are nearly all prairie. The trail leading to Blackfalds or Red Deer and Lacombe crosses the northern part of this township. Large hay sloughs occur throughout the township, but principally in the southern part. Part of the settlers belonging to what is called the Sioux colony are now established in this township and seem more than satisfied with their prospects.—*Geo. P. Roy, D.L.S., 1903.*

Range 20.

Township 27.—This township is much broken by numerous ravines which run into the valley of the Rosebud, a small stream about 25 feet wide at low water, but formidable at high water. This stream runs through the northern part of the township in a valley over 300 feet deep and over half a mile wide. A few poplar, cottonwood and spruce trees grow in the valley, but the remainder of the township is a rolling prairie covered with a luxuriant growth of grass. The soil consists principally of a very hard and compact clay which would apparently become friable with cultivation. Outcrops of coal seams are seen in several places along the banks of the Rosebud; although of an inferior quality it will become valuable for domestic purposes when the country is settled. This township is principally adapted to ranching, as there is good grass with fine water and good shelter for cattle. There are a few sections along the southern part of the township that would make good homesteads. There are three settlers in this township who are located on land previously surveyed. The nearest post office is about 20 miles to the west, but most of the mail is received at Gleichen, 40 miles to the south. There are no indications of any settlers coming to this township, probably on account of the ground being so rough, that it presents few attractions to the settler.—*J. E. Woods, D.L.S., 1903.*

Township 28.—This township is about 50 miles by trail from Gleichen; the road is rough, hilly and little used and on account of deep ravines it makes what seems to be endless detours. The soil is deep clay, dry and hard, but produces a fine growth of grass. The surface is all prairie with the exception of a few thick bunches of scrub on the slope of the coulees facing the north. There is no timber. The ranchers cut hay on the high land; it is principally bunch grass, rather coarse. Rosebud river runs through the southeast part of the township. It is a large muddy stream in high water, but in low water it is about 30 feet wide and 6 inches deep in the rapids. Most of the other small streams run dry in summer. Robinson lake on section 7 is apparently alkaline. The Rosebud could be dammed in several places and would create small

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 20.

water-powers for individual settlers. The climate is very dry, with little snow in winter. Seams of lignite appear all along the bank of the Rosebud, it makes fair fuel, but it is impossible to give any information as to the extent of the seams without some excavation. Several bands of sandstone which might be available for building are exposed in the ravines. I have seen no minerals. Deer and grouse are abundant.—*J. E. Woods, D.L.S., 1903.*

Range 29.

Township 3.—The country is rolling and for the most part prairie. There are a great many bluffs of small poplar and willow, and in some places there is an amount of scrub and underbrush. The township is fairly well watered by Cottonwood creek in the western part and by Waterton river in the east. There are a number of sloughs of good water. This part of the country is suitable only for ranching, but for this it is well adapted. A number of new ranches have been started here recently and some fencing has been put up. The southwest corner of the township is on the side of a rough and wooded mountain and is of very little value.—*G. J. Lonergan, D.L.S., 1902.*

Township 8.—This township is hilly throughout with the exception of a few sections, in the southeast corner, adjoining Beaver creek where the surface is of a rolling character. This hilly surface is broken by ravines, coulees and passes varying from 50 to 250 feet in depth. This locality is prairie throughout with the exception of a few ridges adjoining the north outline where a few scattered jackpine of 20 inches diameter are to be found. The soil is a rich loam, but owing to its stony nature and uneven surface its fitness for agricultural purposes is reduced accordingly. No hay marshes of any extent are to be found in this township, but in compensation the grass is of good quality and abundant. A good trail leading to Cowley towards the southwest and across Beaver creek to Macleod towards the east, crosses this township on sections 12, 13, 14, 15, 16, 17 and 18. The principal stream worth mentioning in this township is Beaver creek. It flows south-southeast; is 4 feet deep, 30 links wide and runs at the rate of 4 miles per hour. In high water it overflows and floods a narrow strip of land in its valley. Owing to the numerous springs found in the hills and a few small streams, together with Beaver creek, the water supply of this locality may be considered as permanent. No water-powers exist nor can any be developed in this locality. The climatic conditions are those generally prevailing in the foot hills, including the noted high winds. Through lack of coal and the scarcity of timber the fuel supply is very limited in this township. No quarries or minerals of economic value were noticed during the operations. No game nor traces of such was found in the township. Concluding I may say that on account of the shelter afforded by the hills, the abundance and the quality of the grass and the permanent supply of water, this township is well adapted for ranching purposes.—*Louis E. Fontaine, D.L.S., 1903.*

Township 11.—The surface of this part of the township where the operations were carried on is hilly throughout. It is a succession of ridges broken by deep ravines and small valleys. This broken surface is to be classed as prairie. A fairly good trail, leading to Claresholm crosses the township on sections 17, 21, 28 and 34. The soil is in general a light sandy loam on a clay subsoil, but owing to the broken and uneven surface its fitness for farming purposes is therefore of a limited value. No timber of any description is to be found in this township. No hay marshes are to be found in this locality, but there is an abundance of grass and it is very luxuriant. Two creeks having a good flow of water and with their courses nearly parallel and distant a mile and a half from each other cross this township in a northeasterly direction. This coupled with the numerous springs found throughout the township will

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 29.

ensure a permanent supply of water. No water-powers are found in this township, nor can any be developed even by artificial works. The climatic conditions of this locality are those generally prevailing throughout the foot hills, including the noted high winds. Owing to the non-existence of timber and lack of coal no fuel can be procured in this township. An unlimited supply of timber for building and fuel purposes can be procured within a reasonable distance to the south and west. No minerals of economic value nor game or quarries were noticed during the operations. On account of the limited area of farming land, this locality would be best adapted for ranching purposes for it affords good shelter for the cattle. An abundance of grass is to be found everywhere and the supply of water is unlimited.—*Louis E. Fontaine, D.L.S., 1903.*

Range 30.

Township 4.—The country generally is rolling prairie, but there are many bluffs of poplar and much small willow and poplar scrub. The largest poplars are about 3 inches in diameter. Drywood river flows in a westerly direction through the southerly part of the township. It is about 50 links wide, 8 inches deep and has a current of about 5 miles per hour. The township, besides, is well watered by many good water sloughs and small streams. The soil is good, but the country is best adapted to ranching. A number of settlers have already settled in the township.—*G. J. Lonergan, D.L.S., 1902.*

Township 8.—With respect to topography, this township may be divided as follows: First, the surface of sections 25 to 36 is a succession of hills broken by ravines and coulees, varying in depth from 50 to 300 feet. Second, in the part comprising sections 13 to 24, the surface is in general of a rolling nature. Third, the remainder, that is to say, sections 1 to 12, may be called a level plateau. This township may be classed as prairie throughout, for there are but a few scattered jackpine of 20 inches in diameter adjoining the north outline. The soil is of a rich quality, but on account of its stony nature its value for agricultural purposes is decreased accordingly. No hay marshes of any extent are to be found in the township, but the grass is abundant and luxuriant. A fairly good trail leading to Beaver creek towards the east and Cowley towards the southwest, crosses the township on sections 13, 14 and 15. Numerous small streams are met in this township; the principal worth mentioning is Tennessee creek. This creek is 1 foot deep, 3 feet wide, with a rate of current of 3 miles per hour. Its course is southerly and its bed is in a ravine varying in depth from 30 to 50 feet. On account of the numerous springs existing in the hills, the water supply of this location may be considered as permanent. There are no water-powers, and no such power can be developed, even by the construction of dams. The climatic conditions of this locality are those generally prevailing throughout the foot hills, not excepting the high winds, which sometimes blow at a furious rate. Owing to the non-existence of coal and the scarcity of timber, the fuel supply is very limited in this township. No stone quarries or minerals of economic value came to my notice during the operations. No game or trace of same was found in this township. I may say that on account of the abundance of the grass, the supply of good water and the shelter offered by the hills, this township may be considered as well adapted for ranching purposes.—*Louis E. Fontaine, D.L.S., 1903.*

Township 11.—This part of the township where the operations were performed is hilly throughout. It is a succession of ridges with intervening coulees and small valleys. This broken surface is to be classed as prairie. A fairly good trail leading from Claresholm, a station on the Calgary and Edmonton Railway crosses this township on sections 35 and 36. The soil is in general a rich loam on a clay subsoil, but on account of the broken nature of the country its fitness for agricultural purposes is

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FOURTH MERIDIAN—RANGE 30.

very limited. No hay marshes are to be found in this locality, but the grass is rich and abundant. Two small creeks, one on section 25 and the other flowing through sections 26, 35 and 36 will ensure a supply of water to meet all requirements. Notwithstanding the permanent supply of water, no water-powers are to be found, nor can any be developed even by the construction of dams. The climatic conditions are those generally prevailing throughout the foothills. Owing to the lack of timber and coal no fuel is to be procured in this township, but an unlimited supply can be had in the adjoining township to the west. No minerals, game or quarries came to my notice during the operations. Concluding, I will say that owing to limited area of the unbroken surface this locality is best adapted for ranching purposes, as there is good shelter for the cattle, a good supply of water and the grass is abundant.—*Louis E. Fontaine, D.L.S., 1903.*

TOWNSHIPS WEST OF THE FIFTH MERIDIAN.

Range 1.

Township 8.—This township is hilly throughout. It is a succession of ridges of various heights, with intervening coulees and small valleys. The broken surface of this locality is prairie throughout. A fairly good trail leading to Cowley towards the south and the Waldron ranch towards the northwest, crosses the township on sections 13, 24, 25 and 36. The soil is in general a rich loam on a clay subsoil, but owing to the broken and uneven surface its fitness for farming purposes is therefore very limited. No timber of any description is to be found. No hay marshes are to be found in this locality, but the grass is of a rich kind and abundant. Numerous springs are found, but owing to their limited capacity the water supply is by no means permanent, and this was all the more evident by the fact that at the time of the operations most of the watercourses were dry, or if not entirely so the flow was very small. No water-powers exist in this locality. The climatic conditions prevailing in this region are those generally prevailing throughout the foothills. Owing to the non-existence of timber and the lack of coal no fuel can be procured in this township. A limited supply of timber suitable for fuel can be procured in the adjoining township to the north. No mineral, game or quarries came to my notice during the operations. In conclusion, I may say that on account of the limited area of farming land ranching would be the best occupation for those settling in this locality. The grass is rich and abundant, and there is good shelter afforded by the hills for the cattle. The water supply, as explained above, might prove a little deficient in dry seasons, but I think that this could be easily remedied by the fact that there appears to be no lack of water in sections adjoining the area surveyed during the present season.—*Louis E. Fontaine, D.L.S., 1903.*

Township 9.—The surface of this township consists of a succession of hills together with deep ravines, coulees and passes, varying in depth from 50 to 150 feet. This locality is prairie throughout, with the exception of a small area adjoining the eastern outline of the township of a triangular shape, having its summit on section 24 and its base being about one-half mile situated on section 1. In this strip of timber poplar, balsam, spruce, jackpine and a few fir of an average diameter of 5, 8, 10, 15 and 20 inches to correspond to the order of their numeration are found. A fairly good trail leading to Cowley towards the south, and the Waldron ranch towards the northeast, crosses the township on sections 1, 2, 10 and 15. The soil in general is a rich loam on clay subsoil, but on account of its uneven surface its fitness for agricultural purposes is reduced accordingly. No hay marshes are to be found, but there is an abundance of grass, and it is very luxuriant. Numerous springs are to be found in this township, and together with Olive creek, which has a good flow of water, the supply can be con-

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 1.

sidered as permanent. No water-powers exist in this township, nor can any be developed even by the construction of dams. The climatic conditions of this locality are those of the foothills in general, including the noted winds. A heavy frost was noticed in this township during the course of the operations (June). A limited supply of fuel, building timber, fence posts and rails can be procured in the timbered area above mentioned. No minerals of economic value nor quarries were noticed during the operations. No game nor traces of same, excepting a few timber wolves, were found in this township. In conclusion, I may say that on account of the early frosts and the limited area of agricultural lands, this locality would be best adapted for ranching purposes, for it affords good shelter for the cattle, and an abundance of good grass being found everywhere, together with the unlimited supply of water, it would, therefore, more than fill the requirements.—*Louis E. Fontaine, D.L.S., 1903.*

Township 10.—This township is hilly throughout. It is a succession of hills, broken by deep ravines, coulees and passes, varying in depth from 50 to 200 feet. The only indications of timber are on the east boundary of sections 14 and 15 and on the north boundary of sections 12. In this limited area are to be found spruce of 10 inches diameter, balsam 6 inches in diameter and poplar of a diameter of 6 inches. The route for reaching this township is by the trail from Cowley to the Waldron ranche. It is a fairly good trail, the only drawback at times being the crossing of Oldman river. The soil is in general a rich loam on a clay subsoil, but owing to the broken nature of the country its fitness for agricultural purposes is limited. No hay marshes are to be found in the locality, but the grass is of a rich variety and abundant. Heath creek, having a good flow of water, will supply all requirements at all times. No water-powers exist in this township. The climatic conditions of this locality are those generally prevailing throughout the foothills. Owing to the lack of timber and coal, no fuel can be procured, but adjoining and to the north of this subdivided part, from all appearances, any quantity can be had. No minerals, game or quarries came to my notice during the operations. Heavy frosts were observed in this township while carrying on the survey. Concluding, I will say that owing to the early frosts and the limited area of the unbroken surface, this locality would be best adapted for ranching purposes, for there is a good shelter for the cattle, a good supply of water, and the grass is in abundance.—*Louis E. Fontaine, D.L.S., 1903.*

Township 11.—The southern outline across sections 1, 2 and 3 runs over a succession of hills covered throughout with spruce, fir and poplar of 10, 24 and 8 inches in diameter respectively. In sections 4, 5 and 6 the line crosses over a rolling prairie surface. The surface adjoining the western outline on both sides is prairie throughout and broken by a good sized creek. The north chord runs over a very broken surface and across sections 31, 32 and 33 the hills are covered with falling and standing burnt timber. The meridian running on the east boundary of sections 6 to 31 passes over a rolling prairie surface. On the east boundary of sections 8 to 32 the hill tops and slopes are covered with green timber of good dimensions consisting principally of spruce, fir and poplar of 10, 20 and 8 inches in diameter respectively. The best route for reaching this township is by the trail leading from Cowley to the Waldron ranche. The trail is fairly good, the only drawback at times being the crossing of Oldman river. The soil is in general a rich loam on a clay subsoil but owing to the summer frosts, which seem to be prevalent, its fitness for farming purposes is limited. No hay marches are to be found in this township but on the other hand there is an abundance of rich grass. Numerous creeks are to be found in this locality, the principal one being on the western outline of the township. It is 15 feet wide, 3 feet deep with a current of 2 miles per hour. All these watercourses will insure a permanent supply of water. No floods are liable to affect any of the land in this locality for the watercourses have not a sufficient flow to overrun the deep gorges in which they are encased. Water-powers are nonexistent nor can any be developed by artificial works. The climatic conditions are those

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 1.

generally prevailing in the foot hills. A good supply of timber for fuel and construction purposes can be procured in the unsubdivided part of this township. No minerals of economic value, game or quarries were noticed during the operations. In conclusion I may say that owing to the early frosts the suitability for farming purposes of this locality is very doubtful, on the other hand owing to the permanent supply of water, the abundance and richness of the grass and the good shelter offered by the hills for the cattle, these conditions make it very suitable for ranching purposes.—*Louis E. Fontaine, D.L.S., 1903.*

Township 12.—The surface of this township is but a succession of hills, broken by deep ravines, coulees and passes, varying in depth from 100 to 150 feet. This locality is partly prairie and partly bush. Timber is found on nearly all the northern slopes of the hills and is largely spruce and poplar 8 and 4 inches in diameter respectively. A fairly good trail leading from Claresholm, a good distribution point on the Calgary and Edmonton Railway will reach this district. The soil is generally a rich loam on clay subsoil but owing to the broken and uneven surface its fitness for farming purposes is therefore very limited. No hay marshes are to be found in this locality but there is an abundance of luxuriant grass. Two creeks, one crossing sections 1 and 2 and the other meandering on sections 13 and 14 will give a permanent supply of water. No water-powers exist in this township, nor can any be developed by construction of dams. The climatic conditions are those generally prevailing in the foot hills, including the noted high winds. As most of the north slopes of the hills, as above stated, are covered with timber, a good supply of fuel can be procured therefrom. No minerals of economic value nor game or quarries were noticed during the operations. In conclusion, I may say that on account of the limited area of farming land ranching would be the best occupation for those settling in this locality. The grass is rich and abundant, there is good shelter offered by the hills for the cattle and the water supply is permanent.—*Louis E. Fontaine, D.L.S., 1903.*

Township 15.—The operations carried on in this township were confined to its northeast quarter and this section is rolling prairie, containing in its principal depressions the bed of a small stream or rivulet. The soil is in general a rich loam on a clay subsoil, but owing to the prevailing early frosts, its fitness for farming purposes is very problematic. A good trail leading from Nanton, a station on the Calgary and Edmonton railway, crosses this township on section 34, and there forms its junction with a trail coming from the north and going in a southeasterly direction to Willow creek. No hay marshes are to be found in this locality but the grass is of a rich kind and is abundant. The numerous small creeks meandering in the northeast quarter of this township will ensure a permanent supply of water. Notwithstanding this permanent supply, no water-powers are to be found nor can any be developed even by the construction of dams. The climatic conditions are those generally prevailing throughout the foot hills. Owing to the lack of timber and coal in this particular part where the operations were carried on, no fuel is to be procured but a limited supply can be had on the timbered ridges in the south of the township. No minerals, game or quarries came to my notice during the operations. Concluding, I will say that owing to the prevailing early frosts, this locality would be of a very limited value for farming purposes; but in compensation, it would afford a good range for ranching purposes, for there is good shelter for the cattle, the grass is abundant and the water supply is permanent.—*Louis E. Fontaine, D.L.S., 1903.*

Township 16.—The surface of this township is hilly throughout. It is a succession of ridges, broken by deep ravines and coulees. This broken surface is to be classed as prairie. Two fairly good trails make this township of very easy access. One of these leads from High river and crosses the tier of sections from Nos. 31 to 36. The other runs from Nanton and crosses sections 2 and 12. High river and Nanton are two important distribution points on the Calgary and Edmonton Railway. The soil is

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 1.

in general a light loam on a clay subsoil, but owing to the broken surface and the prevailing early frosts its fitness for farming purposes is therefore of a limited value. No timber of any description is to be found in this township. No hay marshes are to be found in this locality, but there is an abundance of grass. Numerous small creeks meander in the ravines found throughout this township; the principal worth mentioning being a branch of Mosquito creek, flowing in sections 5, 6, 8, 16 and 17. On section 17 it is 5 feet deep, 8 feet wide, with a current of 3 miles per hour. These various small creeks, coupled with the numerous springs, ensure a permanent supply of water. There are no water-powers in this locality, nor can any be developed even by artificial works. The climatic conditions of this locality are those generally prevailing throughout the foot hills. Owing to the non-existence of timber and lack of coal, no fuel can be procured in this township. A limited supply of same can be had at a distance of about 8 miles to the south. No minerals of economic value, quarries or game were noticed during the operations. On account of the limited area of suitable farming land, together with the prevailing early frosts, this locality would be best adapted for ranching purposes, for it affords good shelter for the cattle. There is an abundance of grass and the supply of water is unlimited.—*Louis E. Fontaine, D.L.S., 1903.*

Township 54.—This township is rolling and hilly and nearly all heavily timbered with poplar, birch, spruce and large willows. A large quantity of spruce logs have been cut, principally on the southern part of the township; still, there are a few small spruce swamps scattered over the township where good sized logs of good quality can be cut—probably a few hundred. Small timber for posts and fence rails is very plentiful. The soil is mostly composed of sandy loam and clay. Good water is abundant all through this township. In the eastern part, which I subdivided, there are no roads except a short pack trail starting from a small lake near the central line and going southwest. Three lakes of considerable extent are found here, namely, No. 1 and Matchayaw lake, on the correction line, and lake no 4 near the southeast corner of the township. On the west side of Matchayaw lake there is a large hay marsh, and also one on the north side of lake No. 4. I did not see any prairie worth mentioning in the portion which I surveyed. The interior of this township is very difficult of access in summer. I did not see any trace of mineral here during the survey.—*J. B. Saint-Cyr, D.L.S., 1902.*

Range 2.

Township 6.—The portion of this township in which my work lay was very hilly. The country is mostly prairie with many clumps and bluffs of poplar and willow scrub, with scattered clumps of large poplar 8 inches in diameter. The township is well watered by numerous creeks which rise in the hills. These creeks flow southeasterly and empty into Southfork river, which flows through the southern part of the township. All the water is good. The township is suitable for ranching only.—*G. J. Lonergan, D.L.S., 1902.*

Township 10 (ranges 2 and 3).—The land surveyed is situated on Oldman river and is reached by a good prairie wagon road from Cowley, a station on the Crow's Nest Railway. The sections surveyed lie on both sides of the river and reach the summits of the hills at an elevation of from 400 to 900 feet above the level of the river. The soil in the valley and on the lower benches, especially on section 31, township 10, range 2 and section 36 in township 10, range 3, is a rich black loam overlying a clay subsoil and is well adapted for raising vegetables. On the upper benches and hillsides the soil is generally composed of gravel and is only suitable for grazing purposes. The surface is a rolling and hilly prairie, partially covered with clumps of poplar and willow on the lower benches and with fir and some spruce on the hills. On the north half of section 35, the southwest quarter of section 25, and the southeast quarter of section 26, township 10, range 3, fir is found up to 24 inches in diameter

4-5 EDWARD VII., A. 1903

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 2.

and some spruce up to 15 inches in diameter, suitable principally for fuel, fencing and building timber. The fir is churn butted and stunted in growth with large branches so that if manufactured into lumber it would produce a very inferior quality. There are no hay swamps, but the bunch grass on the lower benches on section 31, township 10, range 2, and on section 26, township 10, range 3, produces a good quality of hay, but no great quantity. The water in all the small streams as well as in Oldman river is good. There is no trace of alkali. Oldman river averages about 150 feet in width and about 2 feet in depth at low water. The current is very swift and the volume of water flowing per minute equals about 25,000 cubic feet. During high water the stream is about 10 feet deeper than at low water and taking into consideration the increased width of the stream the volume of water will be increased about ten times. Camp creek, with a swift current, is about 12 feet wide and 2 feet deep. Coal creek, about 20 feet wide and 2 feet deep and Ernest creek, about 6 feet wide and 2 feet deep. All of these creeks provide a never failing and ample supply of water the year round. None of the land is liable to be flooded. There are no falls on Oldman river within the limit of the survey. High winds are very frequent, often attaining a velocity of 30 miles an hour. With this exception the climate is a very desirable one, being generally free from frost during the earlier part of the season, but owing to the elevation above sea level, there is danger of cereals being frozen before ripening. There is sufficient wood on these sections to supply settlers for years to come. Besides this there is hardly a section that does not contain one or more seams of coal. On section 31, in range 2, a 6 foot seam of lignite is exposed in two places on Coal creek and about the centre of the same section there is an outcrop of 3 small seams of lignite on the bank of Oldman river. On the north boundary of section 35, in range 3, there is a seam 6 feet thick and on the north boundary of section 36, another seam 10 feet thick, both being bituminous coal. The seam on the north boundary of section 35 has been traced southward across Oldman river to the south boundary of section 26, and it is quite possible that the seams on section 31 in range 2 and section 36 in range 3, may be traced southward to sections 30 and 25 respectively. Neither stone quarries nor minerals of economic value other than the coal have been found within the limits of the survey. Game is limited to prairie chicken, willow grouse, and deer.—*John McLatchie, D.L.S., 1903.*

Township 16.—The operations carried on in this township were confined to its northeast quarter and in this particular section the general aspect is that of a rolling prairie surface containing in most of its principal depressions either a small lake or a slough. The soil is in general a light loam on a clay subsoil, and owing to the broken surface and the numerous sloughs its fitness for agricultural purposes is limited. A fairly good trail leading to Pekisko on the west and High river towards the east crosses sections 25, 34 and 35. No timber of any description is to be found in this township. No hay marshes of any extent exist in this locality, but the grass is abundant. Owing to the small ponds and sloughs prevailing in this township the water supply can be considered as permanent. No water-powers are found in this locality nor can any be developed even by construction of dams. The climatic conditions of this region are those generally prevailing throughout the foothills, including the noted high winds. Owing to the lack of timber and coal no fuel is to be had in this township, but a limited supply can be procured at a distance of about six miles to the west. No minerals of economic value, nor game or quarries or traces thereof were noticed during the operations. In concluding I may say that owing to the limited area of farming lands, ranching would be the best occupation for those settling in this township, for there is good grass in abundance, a permanent supply of water and there is good shelter afforded by the hills for the cattle.—*Louis E. Fontaine D.L.S., 1903.*

Township 53.—The township is hilly and broken in many places. The soil is poor with the exception of the sections adjoining the large spruce and tamarack swamp

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 2.

which crosses this township from section 7 to section 25. A large quantity of very good timber, such as spruce and tamarack, is found in that swamp and in different places through the township. I believe that it would be in the interest of the government to reserve the timber sections 5, 6, 8, 9, 15, 16, 22, 23, 24, 25 and 26. The timber is long and varies from 8 to 18 or 20 inches in diameter. The logs could be floated in the large brook flowing into Matchayaw lake and from there into Sturgeon river. A good summer road could be made at very small expense, starting from the northeast corner of the township crossing the swamp a little west of the central meridian and from there taking a southeasterly direction. The country from there is partly opened and the settlements of Spruce Grove and Stony Plain can easily be reached. The settlers will find all the timber they want for building, fencing and for fuel, outside the above mentioned reserve. Good water is plentiful in this township. A good many sections will require very little work to clear them, especially those adjoining the large swamp, the fire having passed there many times. This township can also be reached by Lake St. Ann trail.—*J. B. Saint-Cyr, D.L.S., 1902.*

Township 57.—This township is very rolling and hilly, the prairie comprises part of sections 1, 2, 3, 4, 9, 10, 11, 12, 14, 15, 16, 21, 22, 26, 27, 28, 33 and 34, the remaining sections or parts of sections being covered with spruce and poplar bluffs with large willows and quite a number of muskegs and sloughs. The soil here is not so good as in township 57, range 1, only a few inches of black loam are found on the heights. The subsoil is composed of clay, or hard clay and stones. I do not believe that farmers will succeed in this township for it is more adapted for ranching than farming. In dry seasons the low land, which is of better quality could be cultivated profitably, but with such a rainy spring and summer as we are having now it is impossible to do anything of the sort. Hay sloughs are found in every part of the township; at the present time of the year there is from 1 to 2 feet of water in them, which is a great inconvenience and renders the hay cutting impossible. The hills are covered with a good grass mixed with pea vine. The timber is of very poor quality and is only fit for fencing purposes and for fuel. The principal lakes in this township are Lake Majeau on the east boundary, part of Lake la Nonne on the western boundary and part of Lake Nakamun on the south boundary (generally called Lac en Long). The lakes above mentioned and the streams that drain this township are tributaries of Pembina river. The water is clear and wholesome in every creek and lake. The Pembina trail crosses this township from the southeast corner in a northwesterly direction, passing the western boundary on section 30. There is also another wagon road around Lake la Nonne. Very little improvement has been made in this township; the people residing in it around Lake la Nonne being ranchers rather than farmers. Some half-breeds keep a few cattle but do not cultivate at all. No traces of mineral have been found in this township.—*J. B. Saint-Cyr, D.L.S., 1902.*

Range 3.

Township 6.—The township is very hilly and the hills are high. There is a good amount of good timber in some parts, but it is scattered. There is a great deal of jackpine and poplar and some scattered large pine and fir averaging 20 to 30 inches in diameter. The township is well watered by Southfork river, and the numerous creeks and springs which flow into it. The water is all good. A few ranches might be located along the river.—*G. J. Lonergan, D.L.S., 1902.*

Township 7.—This township is mountainous. There is no timber of any value on the lines I surveyed. The surface is rocky and has been burned over in places.—*G. J. Lonergan, D.L.S., 1902.*

Township 58.—This township except a small portion at the southwest corner is generally fairly open and covered with scrub, and although the soil is good, is some-

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 3.

what hilly, except along Pembina river, where it is more level. The river enters the township on section 6 and crossing the east boundary on section 24, crosses several times between there and the north boundary. Good farms can be made easily almost all over this township. Several squatters have already taken up places and others say they will as soon as they can locate. One of the settlers who has been on the river for several years speaks highly of the grain-growing qualities and its suitability for mixed farming. I have seen this Pembina valley about 15 miles northwest of here, and there the country appears much the same, so that I expect there is good agricultural land for a long distance along the river. A railway survey line supposed to be the Canadian Northern, was crossed at the north boundary.—*J. K. McLean, D.L.S., 1903.*

Range 4.

Township 31.—The township may be reached by wagon road from Olds or Didsbury, some 15 miles east and situate on the Calgary and Edmonton Railway. The soil is very fair, with a depth of from 4 to 6 inches of clay, or sandy loam, and is best suited to mixed farming or stock-raising. On account of its proximity to the foot hills it is subject to summer frosts. The surface as a general rule is rolling and mostly given to scrub, although patches of merchantable timber have existed, which have been or are being rapidly converted into lumber by the settlers of the adjacent townships. Along Little Red Deer river which flows north through the centre of this township are, or were, clumps of spruce averaging 12 inches in diameter. The settlers for some 30 miles east have, however, cut into it so as to make it unfit for timber berths. Tamarack very suitable for posts is still to be found in the swamps. Poplar suitable for house logs will be available for some years, but the quantity of these latter is not sufficient to prevent the settlers from securing permits to take enough for their needs, or making any reserve of the same. As a general thing there is not a great quantity of hay, but sufficient for moderate needs is to be had from the low lands and patches of prairie, the supply could be easily augmented by a small amount of labour in clearing off the brush where it is light and in the growing of green feed. Little Red Deer river flowing through this township affords a permanent supply of water of the best quality, being snow-water from the mountains and free of alkali. The waters of this stream are contained between banks from 20 to 50 feet high and average about 80 feet in width at flood time, when it has a velocity of about 5 to 6 miles an hour and is then some 10 to 15 feet deep. There is no water-power, except what might be developed from dams thrown across the river. The climate with the exception of the last four years, has been clear and dry. As already mentioned, the proximity of the mountains renders it liable to summer frosts. Poplar, spruce and tamarack timber, which is plentiful, is in its shape more suitable for fuel than for any other purpose. Coal so far as I am aware, has not yet been found, although a find had been reported, but I do not see why it should not exist here. Outcroppings of sandstone appear all along the river, and if developed, I would think, would supply good building stone. No quarries are yet being worked. There are no minerals so far as I could find out. Deer, prairie chickens and ducks are quite plentiful. Trout and greyling are to be found in the river. At the time of writing I might add, that the desirable portion of the township open for homestead, has been about all taken up.—*A. Driscoll, D.L.S., 1903.*

Township 32.—The township is reached by wagon road from Olds, some 15 miles distant on the Calgary and Edmonton Railway. The soil is very fair, varying from a sandy to clay loam, 6 to 10 inches in depth. In general the country is most adapted to mixed farming and stock-raising. The surface is rolling with some brush, with a good proportion of large timber sufficient for the needs of the settler. The valley of Little Red Deer river contains some groves of fair sized spruce, these, however, have

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 4.

been culled until they are only suitable to supply the settlers with house logs and firewood. Hay is scarce; the low places and patches of prairie, however, provide a small amount. A permanent supply of water and of the purest nature is supplied by Little Red Deer river, which flows north through the centre of the township, and I should judge that good water could be had at a slight depth in any part of the township. This river at flood time has a width of 80 feet, depth of about 15 feet and a velocity of some 5 to 6 miles an hour and is contained between banks some 50 feet in height. There is no water-power, except what might be developed by throwing dams across the river. Until the last few years the climate has been dry and clear. Owing to its proximity to the mountains summer frosts are frequent. An abundance of firewood is to be had in most parts of the township, but no definite reports are given as to whether coal exists. It only remains to develop the numerous outcroppings of sandstone which are shown along the river, to produce an abundance of building stone. There are no minerals so far as I could ascertain. Deer, prairie chicken and ducks are found in their seasons, and trout are to be found in the river.—*A. Driscoll, D.L.S., 1903.*

Township 33.—The township is reached by wagon road from Olds or Didsbury, distant some 15 miles east on the Calgary and Edmonton Railway. The soil is fair, varying from clay to sandy loam, with a depth of from 6 to 10 inches, and better adapted to mixed farming or stock-raising. The surface is high, rolling and scrubby, with occasional clumps of large spruce and poplar, the latter mostly culled for timber. Groves of spruce and poplar have existed, but these have been culled to such an extent that there only remains sufficient for the settlers' needs. Hay is not plentiful, but a small amount can be had from the low places and the patches of open prairie. Little Red Deer river flowing through a southeast corner of the township affords a permanent supply of pure snow-water; this stream at flood time has a width of 80 feet, depth 15 feet and a velocity at that time of about 5 or 6 miles an hour and banks rising to a height of 100 feet. There is also a stream running through the northwest part of the township, which although small, will be found very useful to the settlers. There is no water-power, except what might be developed by throwing dams across either of these streams. With the exception of the last few years the climate has been clear and dry, but on account of its proximity to the mountains, summer frosts are frequent. An abundance of timber for fuel is to be had in small patches throughout the township. As yet, however, no positive information of coal having been found, is furnished. Outcroppings of sandstone are to be seen along the river, which if developed should produce good building stone. There are no minerals so far as I could ascertain. Deer, prairie chickens and ducks are plentiful during their seasons.—*A. Driscoll, D.L.S., 1903.*

Township 41.—The soil is generally of a good quality, but as the township contains many sloughs, a large portion of it is unfit for agriculture. The topography is not much broken, although there are elevations which may be called hills, but the slopes are everywhere easy except towards the southwestern corner, where there are a few steep inclines, from one of which, situated on the line between sections 5 and 6, the eye can reach northerly, a distance of 10 miles. This country was originally covered with a thick forest of spruce of fine dimensions as may be seen by the remains in the wind-falls which we have met, but a fire which raged all through this region in 1889 destroyed the most valuable timber. It is now being replaced by a new growth, mostly poplar, mixed with thick willow brush. The eastern slope of Medicine river, which meanders through the township on a course nearly north and south, contains very few spruce trees, but quite a number of these of fair dimensions are met with on the western side of the river, together with some jackpine on the ridges, these last as successors to the original growth. The best spruce found, and which I believe was left untouched by the great fire, is situated on the line between sections 7 and 8, where the quality and

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 4.

quantity of the timber reminded me of the densest forests of northern Quebec. There are very few prairie areas, and they are very small in extent, so that very little farming, if any, can be done without clearing at least the willow brush, but clearing land here is very light work compared to what it is in the older provinces. Before long, I might say before two years have passed, the country will be occupied and settled, many having already visited this section, and the lands to the south and east are becoming comparatively crowded.—*Geo. P. Roy, D.L.S., 1903.*

Township 42.—Poplar, with a few spruce, are the principal kinds of wood in this township. No timber berth of any extent could be located as the township was devastated by fire 15 years ago, and the growth, except in a few places, which accidentally escaped, is of recent date. There is plenty of wood to fill the wants of the settlers for some years to come.—*Geo. P. Roy, D.L.S., 1902.*

Township 43.—This country was originally covered with a thick forest of spruce of fine dimensions, as may be judged by the remains in the windfalls which we have seen, but a fire which raged all through this region in 1889 destroyed the most valuable timber. It is now being replaced by a new growth, mostly poplar intermixed with thick willow brush. The soil is generally of a good quality, but the township containing many sloughs, a large portion of it is unfit for agriculture unless drained. There are very few prairie spots and very small in extent, so that very little farming, if any, can be done without clearing at least the willow brush, but clearing land here is very light work compared to what it is in the older provinces.—*Geo. P. Roy, D.L.S., 1903.*

Townships 46, 47 and 48.—(East outline.)—On section 1 the timber is poplar, cottonwood and birch for the first half mile, when two small creeks are crossed and jackpine met with, which continues across the section. On sections 12 and 7 very heavy spruce from 10 to 24 inches in diameter and suitable for lumbering is met. It extends only about one-half mile west of the line, when the country appears lower and partially burnt, but runs east as far as could be seen. After about a mile of slash and muskeg large spruce is again met with, which with a mixture of pine and scattered cottonwood and poplar continues north to the middle of section 13, township 47, range 4. Spruce and pine is the prevailing timber, the spruce is from 10 to 24 inches in diameter, tall and free from limbs, and would make fine logs. The pine is unlike any I have heretofore seen in this district. It runs generally from 10 to 16 inches in diameter (some trees were seen nearly 24 inches in diameter), is very tall, holding its size well, and free from limbs. A creek about the middle of southeast quarter of section 13 was seen, about 10 links wide and 18 inches deep, and might be available for driving. I think it is a branch of Modeste creek. The latter creek was crossed on the east boundary of township 47, range 4, on section 24, and is there 33 links wide and from 2 to 3 feet deep. It was again crossed on the north boundary of township 48, range 5, where it is over one chain wide, 3 to 4 feet deep, with a strong current, and logs could be easily floated on it. Except a narrow strip of timber south of Modeste creek on section 24, and another on section 36, the whole of township 48, range 4, has been burnt over and is now a bad slash with poplar scrub. The soil is a heavy clay. Along the east boundary of township 48, range 4, the country has been burnt as far as a creek, one of the branches of the Strawberry, and east of this creek green timber is again seen. The pine and spruce in townships 46 and 48, ranges 3 and 4, will make one of the finest timber limits I have seen in the country, and am sure logs can easily be taken to Saskatchewan river by way of Modeste creek.—*J. K. McLean, D.L.S., 1903.*

Township 53.—Nearly all the timber in this township has been destroyed by fire, and there remain only scattered bluffs of second growth poplar and a few spruce and tamarack swamps, excepting in the southern tier of sections along Wabamun lake, where there is some large spruce and cottonwood. The quantity, however, is only sufficient for settlers' use. The rest of the township is more or less overgrown with willow brush and young poplar. For agricultural purposes, nearly the whole of this township rates

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 4.

third or fourth class, as it is generally very rolling, with numerous swamps and muskegs. The soil is light, and on the ridges gravelly. In sections 33 and 34 the soil is of better quality, and would probably rate as second class. There are two small lakes in the township, the larger known as Whitewood lake in sections 20 and 21, the other which I have called lake A., in sections 21 and 28, around which a considerable quantity of good hay could be cut in a dry season, and there are a number of small hay sloughs scattered throughout the township. The water in Whitewood lake is very good. In the southern part sections 16, 17 and 18 are the best, as they are less rolling, but the soil appears to be light, and the southern quarter sections of each are broken by gullies and cut banks. This is particularly the case with the southwest quarter of section 18, more than half of which is waste land. Sections 7 and 8 and the northern part of sections 9 and 10 are useless for farming purposes, as they are broken by deep gullies and ravines formed in sections 7 and 8 by a succession of hog-back ridges lying between the high land and Wabamun lake. Several small creeks flow out of these gullies, but the water is not good, being apparently impregnated with some mineral.—*Hugh McGrandle, D.L.S., 1903.*

Township 54.—This township is rolling, and mostly covered with timber, consisting of poplar, spruce and tamarack from 6 to 8 inches in diameter. The greater portion of the timber has been killed by fire, and is only fit for fuel and settlers' use. There are patches where the timber is mostly all burned off and now grown up with poplar and willow brush. In the southern part of the township there are numerous swamps and two small lakes with marshy shores. On the east, south and west of these lakes and on the west of Lake St. Ann are large grass sloughs where hay is cut in dry seasons. The land in this township is rated third and fourth class, having only from 3 to 8 inches of black loam, with clay subsoil in the flats, and the hills and ridges are light and stony. A creek flows from Goose lake through sections 10, 11, 14, 13 and 24 into Lake St. Ann. A wagon trail runs across the township through sections 19, 20, 21, 22, 23, 26 and 25, with several branches to Lake St. Ann and to the hay sloughs.—*H. McGrandle, D.L.S., 1902.*

Township 55.—The only part of this township surveyed was the south boundary of the same and the east boundary of section 2, and part of east boundary of section 11, and the traverse of a portion of Lake St. Ann and Farming island. The timber is mostly burned and overgrown with poplar and willow scrub. The land is rated third class.—*H. McGrandle, D.L.S., 1902.*

Township 57.—(East outline.)—Here there is considerable spruce, suitable for lumbering, whether in sufficient quantities for a good limit is doubtful. The country is somewhat hilly and would not make good farms.—*J. K. McLean, D.L.S., 1903.*

Range 5.

Township 48.—(North outline.)—The timber east of Modeste creek, which is crossed on section 34, has been destroyed by fire and is now down in slash, with poplar scrub. The land is poor heavy clay, and is broken by swamps. A strip of green timber about a mile in width and in which there is considerable spruce, runs along the west side of Modeste creek. About two miles north there is green timber on both sides of the creek. The spruce although large is scattered, but as it is comparatively close to the creek, can easily be taken out. The rest of the country along the north boundary of this township is very poor. The timber is all burnt and down, while large swamps are met.—*J. K. McLean, D.L.S., 1903.*

Township 51.—(West outline.)—The east boundary of this township passes along the centre of Low-water lake, a shallow lake nearly six miles long and varying from one to two miles in width. The country along the west side of the lake is high and covered with timber. In travelling across the northerly part of the township it was

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 5.

seen that the timber extends only a short distance west and is almost entirely destroyed by fire. What remains is chiefly jackpine, small and scrubby, and of no commercial value. The country is rough and hilly, with poor soil, and not suitable for agriculture. There is a fair range for cattle, the summer feed being good. Hay is reported plentiful west of the south end of Low-water lake although I did not see it.—*J. K. McLean, D.L.S., 1903.*

(East outline.)—This line passes across Low-water lake. The west side of the lake appears high and hilly with green timber extending for some distance westward. Along the east side the country is lower and is also timbered.—*J. K. McLean, D.L.S., 1903.*

Township 52.—I did not run the east boundary of this, but cut a pack trail northwesterly through the township to Wabamun lake. The country is very rough and hilly and thickly timbered with poplar and cottonwood from 8 to 12 inches in diameter. Occasional spruce are seen, but they are so scrubby and scarce that they were of no value for lumber.—*J. K. McLean, D.L.S., 1903.*

Range 6.

Township 33.—An area of about three square miles in the southwest corner is heavily timbered. Jackpine occurs here running to eighteen inches diameter, with a smaller quantity of fourteen inch spruce, balsam, fir and poplar. This part is very hilly. The remainder of the township is lightly wooded or quite open. The surface is rolling and in places hilly. The soil is first and second-class.—*J. N. Wallace, D.L.S., 1903.*

Township 34.—The best part is the James river valley which is lightly wooded with small poplar and prairie patches are large and numerous. North of James river, the east half of the township is generally wooded all over. The west half is very rough with many open spaces.—*J. N. Wallace, D.L.S., 1903.*

Township 35.—(West outline.)—The westerly half is all wooded with much swamp area on which is small spruce and tamarack. The easterly half is very open, there being large tracts of almost bare prairie. This part is very hilly in places.—*J. N. Wallace, D.L.S., 1903.*

(East outline.)—The east outline of the township runs across a rolling and in places hilly country, but the timber is not heavy and many parts, especially that about the north end of the outline of this township, form a very attractive country for settlers.—*J. N. Wallace, D.L.S., 1903.*

(Subdivision.)—This township is accessible from the north or east by a trail on the north side of Raven river, which trail can be made a very good road in ordinary seasons, and Raven river, a small stream about 30 feet wide, could be bridged. The soil is mainly a clay with a few places where black loam is found on clay subsoil. It is broken across sections 25, 26, 27 and 28 by a ravine about 200 feet deep, through which a small stream flows from its head in section 19, and which stream is gradually enlarged by tributary streams flowing from the north and south, until it becomes about 20 feet wide, 9 inches deep, with a current of about three miles per hour on section 25. From this stream the land rises towards the south for two miles when the country becomes hilly with small sloughs and ponds between them and then descends towards the southwest. Along the north boundary the land descends generally to Raven river in the next township (35, range 6). Altogether the township is broken too much by hills, ravines and creeks to be a good farming country, although where grass grows it shows a very luxuriant growth. Along the creeks are a few spruce large enough for small saw-logs but too few for commercial use. Also there are a few small bunches of jackpine from 7 to 10 inches in diameter, but short and with limbs to the ground. The remainder of the timber is

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 6.

poplar, willow and poplar brush, very thick generally and of no value except for fuel. The few hay meadows are small and not at present of value, being generally full of scrub and willows. Water is invariably good, no alkali was found in the township. Streams are all small and would not be available for water-power. Summer frosts occur, I am told. I did not find any coal or lignite, nor stone quarries or minerals, nor was there any game seen of any kind, although I am told that the Stony Indians range through this country finding deer and moose in the fall and bears in the spring. Speckled trout are plentiful in the larger streams. When the land is cleared it should be a good ranching country as the soil is capable of growing good vegetation and the water the best that can be had anywhere.—*Henry W. Selby, D.L.S., 1904.*

Township 36.—(East and west outlines.)—The central part of the township has many extensive open areas. The part northwest of Clearwater river is partly open and partly timbered in a very irregular manner. A belt of 12-inch spruce occurs along the Clearwater, but the remainder of the timber is small.—*J. N. Wallace, D.L.S., 1903.*

Township 51.—(East and west outlines.)—The country along the east boundary of this is much broken by swamps with intervening ridges covered with scrubby pine. On section 24 the country becomes more open, of better quality, although still of a poor class and is higher. A pack trail from Wabamun lake is crossed on this section. Continuing south the country still improves slightly and is partially covered with scrub. Along the east boundary of township 51, range 7, the country is much broken by swamps. On section 30 a creek with an open valley, running southeast is crossed. I do not think township 51 and 52, ranges 5, 6 and 7, west of the fifth meridian will ever be suitable for settlement. Where not swampy the country is rough and hilly. The soil is a heavy clay. On seeing the same soil in other parts of the country where the timber had been burnt, I was under the impression that owing to excessive fires the alluvial soil had been burnt, but find here among the heaviest timber that the clay is covered with a very few inches of loam or decayed vegetable matter, when a stiff clay not unlike gumbo is found. I am somewhat doubtful if this heavy stiff clay will be suitable for grain growing. However, as the country is rough, and none of the timber of any commercial value, the spruce being scrubby and scattered and the poplar and cottonwood (of which there is plenty much closer to land suitable for settlement), only suitable for fencing and small buildings, and as a great number of creeks which eventually find their way to the Saskatchewan either direct or by way of Wabamun lake or Isle lake rise here, it might be well if these townships could be kept without subdivision and the timber preserved as it now is for at least a number of years.—*J. K. McLean, D.L.S., 1903.*

(East outline.)—This line passes through a very thick growth of poplar and cottonwood, with a little birch and some spruce. The poplar and cottonwood are from 16 to 20 inches in diameter, while the birch is small and the spruce scrubby and unfit for lumbering. The soil is clay, with a very thin covering of loam or vegetable matter. On section 36 there is considerable jackpine, but it is small and scrubby; large poplar and cottonwood are met on section 35 and continue with slight exceptions across the township.—*J. K. McLean, D.L.S., 1903.*

Township 52.—(West outline.)—At the northwest corner of this township there is a grove of jackpine, very scrubby and thick on the ground. It extends south about one-half mile, when a small area of open country is crossed. This open country extends east about a mile, and a short distance west a very thick, heavy growth of poplar and cottonwood, with occasional spruce is then met with, which extends to the south boundary. The poplar and cottonwood are of good size, some up to 20 inches in diameter. The spruce, although large, is scrubby and very much scattered. Along the north boundary the pine extends about a quarter of a mile when poplar is met. A very

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 6.

narrow strip is open along the creek in section 36, but heavy poplar and cottonwood, with some spruce and pine cover the whole of the township.—*J. K. McLean, D.L.S., 1903.*

Range 7.

Township 33.—(East, west and south outlines.)—About four square miles of this township at its southwest corner are very hilly and timbered with 10-inch pine and alder thickets. The hills are 300 to 500 feet high. The remainder of the westerly outline runs through a somewhat hilly country. The centre and east of the township are almost entirely open land, traversed by numerous branches of Bearberry creek. It is one of the best townships of those outlined for cattle-raising.—*J. N. Wallace, D.L.S., 1903.*

Township 34.—(East and west outlines.)—Along the north side of James river, the country is composed of prairie patches alternating with light poplar. The easterly half of the township is rough and partly open. The westerly half has many small hills formerly covered with small jackpine, but now largely burnt over and covered with small windfall. At the northwest, the timber is very dense but small. The nearest well defined foothills are about 8 miles west of the northwest corner of the township.—*J. N. Wallace, D.L.S., 1903.*

Township 35.—(East and west outlines.)—About three quarters of this township comprising all that lies southeast of Raven river is generally timbered with small pine, poplar and spruce. The remaining quarter of the township has been burnt over and there is now a great deal of windfall. There are irregular patches of green timber.—*J. N. Wallace, D.L.S., 1903.*

(Subdivision.)—This township is very rough with ridges running generally northeast and southwest nearly parallel with Raven river, therefore, it can be most easily entered from the northeast on section 35. From thence trails might be made in many directions, all more or less hilly and hard to travel, more especially south of Raven river. The soil generally is a clay loam on clay subsoil with an occasional sandy knoll. Raven river enters in section 7 and leaves at section 35 flowing in a well defined valley, but following therein a very tortuous course. A large lake occupies portions of sections 1, 2, 11 and 12, with a small creek of excellent water running into it from the southwest. The surface of the country is thickly covered with poplar, jackpine and spruce, but except along the creeks it is too small for any use but fuel. No hay lands were seen in the township. The supply of water is good, sufficient and of the very best quality, but I do not think it large enough to be of any value for water-power purposes. There were no coal or lignite veins seen, neither stone quarries nor mineral of any description nor game. The township if cleared of timber would not make good farming land, but for hay or grazing purposes might be very satisfactory.—*Henry W. Selby, D.L.S., 1904.*

Township 36.—(North, east and west outlines.)—South of Clearwater river, the lands are nearly all timbered and there are only a few small open spaces. North of the river, the country has been burnt in many places. Towards the northwest there is a large area of pine forest, very thick, but not over 8 inch trees on the average. The northeast part of the township is much more open. Clearwater river can be forded in the late summer but its steep banks make travelling with a wagon impossible except near its intersection with the base line on the north of this township. Once it is crossed, there is a good road along its north bank through the township.—*J. N. Wallace, D.L.S., 1903.*

Township 52.—(North and east outlines.)—Along the north boundary of this township there is a heavy growth of poplar and cottonwood extending almost to section 34, when a stretch of open country along the pack trail from Isle lake to Brazeau

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN RANGE 7.

river is met. However, this open stretch is narrow and much broken by swamps. The pack trail is crossed on section 33 and Pembina river is met on section 32. The valley is very narrow and the country along the west side appears very rough and is wooded. Coal exposures show on the cut banks of the river. Going south along the east boundary of this township large poplar and cottonwood extend about 2 miles when the country becomes much broken by large muskegs and swamps, which continue to the south boundary of township 51, range 7. None of these townships are suitable for agricultural purposes. The soil is clay, over which there is a thin covering, not more than 2 or 3 inches of mould or loam. The timber is only suitable for small buildings and fencing and has little commercial value.—*J. K. McLean, D.L.S., 1903.*

Range 8.

Township 29.—(East outline.)—The line passes over a very wild country composed entirely of hills formerly heavily timbered but now devastated by fire. The hills are from 400 to 700 feet high and covered with an immense quantity of standing and fallen burnt timber. Everywhere a thick growth of jackpine varying from 1 foot to 15 feet in height is now coming up. Green timber only occurs in patches along the outline, sufficiently large to bear witness to the great loss caused by fire. Along the south of the township to the east there is still some large living timber, but as far as could be seen to the west (and many miles can be seen from the tops of the high hills) everything has been burnt. Fire has evidently run here since the base line was surveyed.—*J. N. Wallace, D.L.S., 1903.*

Township 30.—(East outline.)—The east of township 30 is not of so rough a character as that of township 29. The valleys are wider and much more open but the country is still broken by long ridges of hills.—*J. N. Wallace, D.L.S., 1903.*

Township 31.—(East outline.)—The east of township 31 is still hilly but the hills are not high. The part south of Red Deer river runs through much fallen timber, and the soil is very shallow. To the west all is burnt. There is some open but hilly land to the east. The part of this outline north of Red Deer river crosses a rolling tract of good land extending for a mile or so on each side of the line.—*J. N. Wallace, D.L.S., 1903.*

Township 32.—(East outline.)—The outline passes over several long ridges of hills about 450 feet high with some wide valleys extending as before south-southeast. The last couple of miles near the base line cross a country composed of irregular round-topped hills covered with a forest of 8-inch pine, the forest extending southeasterly across the township. From what could be seen along the above line, the country lying to the west is quite unsuitable for anything in the way of agriculture. The country here is generally thickly covered with small timber, burnt for some miles north and south of the correction line. Except for a small prairie area on the south of Fallen Timber creek, there is no open land except what is swampy.—*J. N. Wallace, D.L.S., 1903.*

Range 25.

Township 77.—The outlines of this township were run but no subdivision work was done. The country along the base line is swampy for the first three miles and of a rolling sandy nature for the next two. The last mile of the base line and the first five miles of the eastern boundary are the usual poplar and spruce country. The last mile of the east boundary and the whole north boundary run through a network of open marshes, interspersed with some belts of very good land, rather heavily timbered.—*C. C. Fairchild, D.L.S., 1902.*

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 25.

Township 78.—The south two-thirds of this township is very marshy for a great part and Coote lake is little more than a great marsh. The township is heavily timbered in the north part while in the south it is heavy in places and light in others. The country adjoining the east and south sides of Coote lake is full of marshes of varying size and practically grades No. 4 as for settlement. The pack trail from Lesser Slave lake to Spirit river crosses this township running north of Coote lake. The soil is excellent where not marshy and in some of the dry marshes hay was seen six feet in height.—*C. C. Fairchild, D.L.S., 1902.*

Township 79.—(South and east outlines.)—The country is generally heavily timbered, soil good and generally dry.—*C. C. Fairchild, D.L.S., 1902.*

Township 80.—As only the boundaries and the northern one-third of this township were surveyed, the report is confined to that part of the township. North of Peace river the country is generally rolling prairie with enough timber on some sections to provide for the requirements of the prairie parts. On the margin of the river and extending back in places for a mile or more is a block of as fine farming land as can be found in the North-west Territories. These lands are partially prairie and the soil excellent. The surface is generally level and a fringe of good timber skirts the river. On the south side of the river, with the exception of the prairie running down to the river, shown on plan, is found heavy timber covering both side-hill and valley. The valley, when cleared, will make excellent farming land, and timber enough can be had for all requirements. A considerable sprinkling of spruce is found throughout the other timber, but not in quantities to recommend its being reserved. On the islands, or rather what are islands in high water, large spruce groves in such quantities that I would recommend its reservation. The 21st base line, in its fifth mile across range 25, reaches the summit of the banks of Peace river, which I estimated at 900 feet above the river. On the plateau the land is excellent, and not so heavily timbered as the south flat of the river. Numerous small hay marshes abound in this level plateau, but I am informed by the Indians and others that these are practically all dry except in a wet season such as 1901. In fact, great difficulty is met in finding water by hunters here except in the river, Egg lake and two or three creeks found between. This township, like the one to the west, is very difficult to approach except by boat or saddle horse, and this objection applies to the whole country between the 20th and 21st base lines.—*C. C. Fairchild, D.L.S., 1901.*

Range 26.

Township 77.—This township may be divided generally into two parts for agricultural purposes, viz. : (1) north of Birch hill; (2) south of Birch hill. That part lying north of Birch hill slopes gradually to the north from the crest of the hill and contains some excellent farming land where not too heavily timbered. The northwest corner is the best part of the township. The eastern portion of the north half is more heavily timbered, chiefly with poplar, and interspersed with small marshes. This may be said to be the case with the eastern part of the south half as well, except that the timber is larger with a greater proportion of spruce and marshes are more frequent and larger. The southwestern portion consists for a great part of a series of connected swamps and marshes, the only valuable feature being a considerable extent of large poplar, spruce, tamarack and jackpine timber. Birch hills extend only about one mile east of the sixth meridian; the east and south sides of the range are very steep and broken, while the north slope, as before mentioned, is for the greater part a steady decline.—*C. C. Fairchild, D.L.S., 1902.*

Township 78.—The surface of this township is generally slightly undulating and covered with a growth of poplar and spruce of varying size. A considerable portion of the surface is covered with a thick undergrowth of willows, and a large marsh in the

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE FIFTH MERIDIAN—RANGE 26.

centre of the township detracts considerably from its value. The soil is excellent where dry, but it is rated as No. 2 only on account of the timber growth. The creeks shown on the lines all run dry in the summer. The trail from Lesser Slave lake to Spirit river settlement passes through the southern part of the township.—*C. C. Fairchild, D.L.S., 1902.*

Township 79.—This township has more prairie and is better drained than any of the others examined by me on the south side of Peace river. Fox creek, a never-failing stream of good water, runs from east to west across the township and a branch runs from the southwest angle of the township in a northeasterly direction to join the main stream. This branch, however, dries up in summer. A greater part of the land lying on either bank of these creeks is prairie, broken with bluffs of small poplar and willow. The soil is excellent, generally well drained and but for the timber which increases in size as you get further from the creek, would be number one for agricultural or grazing purposes. Some small marshes are found in the north end of the township, and strange to relate, though the north limit runs at the west side within one mile of Peace river the drainage is all towards Fox creek. The ravine through which the creek runs is only about 25 feet deep at the east boundary and increases to 100 or more at the west boundary, where both banks are more or less heavily timbered.—*C. C. Fairchild, D.L.S., 1902.*

Township 80.—On July 26 I started the survey of this township. The greatest difficulty in the survey was the crossing of the various marshes, many of which had three feet of water in them at the end of July which were practically dry by the middle of September. The township lies almost wholly in the valley of Peace river, *i.e.*, between the tops of the high banks. The soil is first class clay loam and black loam, but a great portion of the surface is so broken that it would be practically useless for grain farming but would do for grazing. There is plenty of timber for wood and building in the township, although a portion of the river had little beside small poplar scrub. The growth during the summer of 1901 was almost tropical, the pea vine and grass reaching a height of 6 feet in places. Saskatoon and raspberry bushes are plentiful in many places and the yield for the season was very prolific. Horses run wild over the district north of the river and have the slightest difficulty in wintering without feed. The township is approachable, however, only by boat or saddle horse, the deep gullies formed by the tributary creeks, making road-building almost an impossibility. The creeks shown on plan and in notes required to be bridged to cross my pack trains, while in September no water was running in any of them. The greater part of the township north of Peace river has been burnt over in past years, while the south bank is as yet untouched. Peace river was so flooded that I found it impossible to swim my horses and I was forced to transfer them in a boat, but by the time the traverse of the river was made it had fallen to normal low water. Some excellent flat lands mostly on the south side of the river would make splendid farms. These lands hemmed in by surrounding hills, like the settlement at the mouth of Smoky river, are among the finest I have ever seen.—*C. C. Fairchild, D.L.S., 1901.*

TOWNSHIPS WEST OF THE SIXTH MERIDIAN.

Range 4.

Township 80.—(Survey of section 18.)—The Dunvegan flat is not extensive, while the country north of the river is prairie with bluffs of poplar and spruce along the creeks.—*C. C. Fairchild, D.L.S., 1902.*

Ranges 7, 8 and 9.

Townships 17 and 18.—The lines run here with a few exceptions form the southerly limit of the railway belt. The survey ran through Trinity creek valley and over

4-5 EDWARD VII., A. 1905

TOWNSHIPS WEST OF THE SIXTH MERIDIAN—RANGES 7, 8 AND 9.

a mountain range to Okanagan valley. Most of the country is rough and mountainous. There are several sections of fairly good agricultural land on Spallumcheen river and near the mouth of Trinity creek. There is a small quantity of good timber. A great deal of the timber has been burnt.—*Jos. E. Ross, D.L.S., 1903.*

Range 12.

Township 17.—In this township a survey was made of a small piece of land fairly well adapted for farming, lying between provincial lots and the mountain.—*Jos. E. Ross, D.L.S., 1903.*

Ranges 23 and 24.

Townships 18 and 19.—The survey here runs easterly from a point near Spatsum station on the Canadian Pacific Railway. The only valuable land here suitable for agricultural purposes is the wild hay meadows which lie in the valley of Pukaist creek. This valley begins about 6 miles east of Spatsum and runs southeasterly for about 6 miles; it varies from a quarter mile to a half mile in width. The elevation is from 2,500 feet to 3,000 feet above Thompson river. There is a trail or rough wagon road from Spatsum to the valley. The best meadow land has been used and claimed by cattle ranchers for ten years or more. The meadows have been improved and the hay has been cut each year. Several dwelling houses and a number of cattle sheds have been built. The land could not be dealt with for lack of a survey.—*Jos. E. Ross, D.L.S., 1903.*

Ranges 24 and 25.

Townships 19 and 20.—The best land in these townships was taken up in provincial lots from 20 to 30 years ago. The land required to be surveyed lay between and adjoining these lots. The country is open and rolling, with some bench land fit for farming. The locality being dry, irrigation has to be resorted to in order to raise good crops. The benches are from 400 to 500 feet above Thompson river.—*Jos. E. Ross, D.L.S., 1903.*

Range 25.

Townships 18 and 19.—The land surveyed in these townships lies in the Venables valley. Most of the valley has been taken up in provincial lots. There is a small patch at both the upper and lower ends of the provincial grants, suitable for farming purposes. The land lies a few miles west of Spatsum station on the Canadian Pacific Railway at an elevation of 1,500 feet above Thompson river.—*Jos. E. Ross, D.L.S., 1903.*

Ranges 28 and 29.

Township 4.—There is a little land fit for settlement near Trout lake in section 32 and northeastward up the valley, but not a large amount and very hard to clear. The timber is cedar, fir, hemlock and alder and is very dense. At the mouth of Trout lake creek is a good boat landing and camping place.—*A. W. Johnson, D.L.S., 1903.*

Township 5.—There is no land fit for settlement with the possible exception of spots at the north end of Cascade bay. There is not much good timber, the mountain being very steep and rocky. At the north of Slollicum creek is a good boat landing and camping ground. This creek falls two or three thousand feet in a distance of less

SESSIONAL PAPER No. 25a

TOWNSHIPS WEST OF THE SIXTH MERIDIAN—RANGES 28 AND 29.

than a mile, and would afford enormous water-power.—*A. W. Johnson, D.L.S., 1903.*

Township 6.—The only land fit for settlement is at the mouth of Fifteen-mile creek in section 31, and there is little good timber in the township.—*A. W. Johnson, D.L.S., 1903.*

Range 30.

Township 3.—That part of Queen's island adjoining the seventh meridian to the eastward, comprising parts of sections 8 and 9 in this township is low cottonwood land with rich soil, but subject to flood at exceptionally high water, though safe in ordinary years. The land is not very difficult to clear. I also traversed some islands and sand bars in sections 5 and 9, which were formed during the high water of 1894 and are not shown on the latest township plan. There is good fir and cedar on the mountain, and a little land in the northeast quarter of section 36 where a small clearing has been made but abandoned.—*A. W. Johnson, D.L.S., 1903.*

Township 4.—The canyon has in most places throughout its entire length almost perpendicular sides, sometimes 300 feet high, the creek being one long series of rapids requiring the greatest caution. There is practically no level land after the canyon begins, but the timber is very good, fir, cedar and hemlock, with no brulé. The timber in the northern part of this township is exceptionally fine, and a logging camp is at work there belonging to the Harrison River Lumber Company (since bought out by a Rat Portage firm I believe). The timber is finer than anything I have seen in the railway belt, both cedar and fir ranging from 3 to 7 feet in diameter, and frequently as high as 10 feet. I noticed one fir that was 15 feet in diameter. The cedar is much sounder than is generally the case in this province, and the fir very clear of knots and of unusually good grain. But though the timber is good the river is very much the reverse, and from what I could see it would be as cheap to put in a light railway from the lake as to do the necessary blasting in and piling below the canyon, which would be unavoidable were the river used for driving. These remarks about the timber apply to the whole of the valley as far as the railway belt limit. The creek has no falls between the lake and Harrison river, but from a rough approximation by stadia the difference in level is nearly 900 feet.—*A. W. Johnson, D.L.S., 1903.*

Township 5.—There is some yellow cedar on the west side of Chehalis lake, and the common cedar though smaller as you get higher is good for 3,000 feet above the water. A log jamb a quarter of a mile long blocks the creek at the south end of the lake. The mountains rise precipitously from the water, and Skwellepil creek on the west side has its source in snow-capped peaks seven or eight thousand feet high. There is a fall of 40 feet on Skwellepil creek.—*A. W. Johnson, D.L.S., 1903.*

Township 6.—There is a flat at the head of the lake about a mile and a half long, averaging 30 chains in width, with some good soil. The timber on it is the finest in the valley. Beyond this, right up to the railway belt limit, Eagle creek falls through a canyon similar to that of Chehalis creek, and the mountains close in on both sides. About two miles up Eagle creek, from the head of the lake, the creek falls over a rock 60 feet high. Stadia creek rises in glaciers in the same range as does Skwellepil creek, some three or four miles from its junction with Eagle creek. The timber is very good all the way, and extends high up the mountain sides, but beyond the flat already mentioned there is no land fit for settlement. From the railway belt limit to the head of Chehalis lake, Eagle creek falls 700 feet.—*A. W. Johnson, D.L.S., 1903.*

Townships East of the Coast Meridian.

Township 19.—There is some good land on Sumas mountain, in the west half of sections 28 and 33, suitable for fruit-raising, but on slopes much too great for ordinary

4-5 EDWARD VII., A. 1905

TOWNSHIPS EAST OF THE COAST MERIDIAN.

farming. The timber on the mountain is mainly alder and second-growth fir, with some larger fir in places, but not very difficult to clear. In sections 34 and 35 there is some grazing land, but this is under water in summer.—*A. W. Johnson, D.L.S., 1903.*

Township 20.—The mountain is very steep and quite unfit for settlement in any section we worked in, and the bottom land only fit for grazing, as it floods annually.—*A. W. Johnson, D.L.S., 1903.*

Townships 22 and 23.—Sumas lake is very shallow, and for many months every year a large part of it is a mere flat. There is a good blue clay soil, about 5 feet deep, at all corners that we had to dig, on both sides of the lake, which is totally useless till the lake is drained and a dyke built from Sumas mountain to Chilliwack mountain. Whether that is practicable or not I have not sufficient data to say, but if so it would open twenty square miles of what might be made the most fertile land in the province.—*A. W. Johnson, D.L.S., 1903.*

SESSIONAL PAPER No. 25a

APPENDIX No. 12 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF P. R. A. BELANGER, D.L.S.

RESTORATION OF SURVEY MARKS IN PART OF DISTRICT OF ASSINIBOIA.

OTTAWA, February 22, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit a general report of my survey operations during last season.

In compliance with your instructions, dated March 28, 1903, allotting me the restoration of survey marks in a portion of the Assiniboia district, I left home on April 3 for Yorkton, the site of my last season's headquarters, where I had left my horses and outfit for wintering, and arrived there on the 7th of the same month.

After spending a few days at that place to organize my party and complete the outfit, I shipped the whole on cars to Binscarth, and thence drove to the point where I intended commencing work, east of Moose mountain, passing through Fort Ellice and Moosomin.

At the latter place I met three of my assistants, Messrs. Steele, Moore and Engler, together with seventeen of my men who had just arrived from Winnipeg, and after having made arrangements for supplies and their transport I proceeded to my initial point in township 9, range 34, west of the principal meridian, where I arrived and camped on April 20.

The next day was employed in instructing all members of the party in their duties in that kind of surveying, after which the work was carried on with no more loss of time than that involved in the long move from this district to the Touchwood hills district, and similar long moves to other parts of the country.

The first block in which I restored the survey marks consisted of townships 6, 7, 8 and 9, in ranges 30 to 34 inclusive, and also township 5 in ranges 33 and 34, all west of the principal meridian.

All these townships are open prairie, and were supposed to be originally marked with wooden posts and mounds; however, one of them, viz., township 9 in range 32, though shown in the original field notes as having been marked with mounds had, with the exception of three or four corners, all been marked with wooden posts only, of which but a small burnt portion remained to indicate the location of the old marks.

In township 6, ranges 31 and 32, two sets of mounds were found marking the same corners. These townships had been sub-divided by two different surveyors, the last survey being made in 1889 by D.L.S. Brownlee, who put up new marks but did not destroy the old ones. I renewed the monuments established by Mr. Brownlee, and destroyed the others. His survey had been marked with iron posts where required, but only a few of them could be found. However, I had no trouble in finding the right mounds as I located them at the proper distances, and they were easily recognized by their size and the position of the pits, which were in all cases of larger dimensions than those of the original subdivision, which latter I generally found at distances varying from 20 links up to as much as 9 chains away from the right position. At some corners I had even to destroy two mounds. This would indicate that the first sub-divider was very uncertain as to the accuracy of his work, and duplicated his marks in the hope that one at least would be at the right place.

4-5 EDWARD VII., A. 1905

As the regulations of the new manual could not always be followed to the letter for this kind of survey, I believe a few explanations will be necessary.

The restoration of survey marks in this prairie country was made as follows:—

The section corners were re-marked by putting an iron post properly marked in the centre of the old mound and by re-digging the pits to their full size. Such corners are described on my plan as I. P. pits.

The witness marks for section corners were also renewed by placing an iron post in the centre of the old mound and re-digging the trench around the mound. When the distance of the witness monument to the true corner was known it was marked on the post, but when unknown, the post was only marked with the letters 'W.T.' and these monuments are described on my plans as 'Wit. I.P.T. re-dug,' plus the distance when known.

When witness mounds were found marking quarter-section corners, these were restored by re-digging the trench only, and are shown on plans as 'Wit. T. re-dug.'

As to ordinary quarter-section corners, they were re-marked by digging new pits at the proper distance from the centre of the old mound, and such corners are indicated on my plans by the word 'Pits,' but in no case were the old mounds destroyed.

This prairie country was generally not found to be much settled when I reached there, but I noticed that new settlers were coming in every day and taking up land as soon as it was re-marked, and as this tract of country lies adjacent to a branch of the Canadian Pacific Railway, known as the 'Arcola Division,' which crosses township 7 in ranges 30 to 34, and the soil is good, I have no doubt that all the land available for homesteading will be taken up within a year.

Owing to the want of proper marks, some settlers who took up homesteads in that country in 1902, and had made improvements thereon by putting up buildings and breaking land, had to remove when they found they had located on the wrong sections.

On June 9, having completed the restoration of survey marks east of Moose mountain, I proceeded to Touchwood Hills.

On my way, I spent two days in the valley of Qu'Appelle river, making a traverse of the river across township 19 A, range 11, west of the second meridian, together with the measurement of a couple of lines, as requested by your instructions, which I had received a few days before, and in the forenoon of the 19th I reached my second block of surveys and camped in township 24, range 14, west of the second meridian, commencing work the same afternoon.

Here I restored the survey marks in thirty-two townships, nine of which had mostly all been marked with wooden posts, though they were generally open country and partly shown in the official notes as having been marked with posts and mounds.

In these the marks were so badly obliterated by the action of the weather and fires that nothing but rotten and charred remains of posts were left to indicate the corners.

Numerous intending settlers went over these townships last spring with the intention of taking up lands, but were unable to find a single post to locate a homestead.

This second block was re-marked as above described for open townships east of Moose mountain when mounds were found, but as wood could be obtained within a short distance, wooden posts were added to pits at quarter-section corners, but when corners were only found marked with posts, these were always renewed according to the manual whenever possible. However, in places where section corners had been originally marked only with wooden posts in marshes where a mound or pits could not easily be added, I re-marked them with an iron post witnessed by a wooden post planted a few inches behind it.

As to quarter-section corners falling under same circumstances, they were renewed by a new wooden post only. These corners are indicated on plans as 'I. P. and W. P.' or 'W. P.' respectively.

Though the new manual does not provide for such marking, I considered it better to renew such corners in that manner than to leave them unmarked.

SESSIONAL PAPER No. 25a

While at Touchwood Hills, I also complied with your instructions by commencing the subdivision of the unsurveyed part of township 26, range 16, but owing to the extremely wet character of the country, I regret to say that this survey had to be postponed.

The tract of land I passed over in this district is all of very good quality for mixed farming, principally that part known as the 'Round Plain.' The great drawback to its settlement was the want of proper survey marks, and also its distance from railway communication, but now these obstacles have been partly removed by the resurvey and the advantage afforded by the extension of the Canadian Pacific Railway branch, known as the 'Pheasant Forks Branch,' which was under construction last summer and runs near the southern part of this tract of land, and the proposed Grand Trunk Pacific Railway, which, it is supposed, will cross through the 'Round Plain,' and also the 'Yorkton Branch,' on which rails have been laid to Sheho and the grading extended to Fishing Lake.

After the completion of the surveys in the Touchwood Hills district, I proceeded on October 20 to township 26, range 30, west of the principal meridian, in compliance with your instructions requesting the restoration of survey marks in that township. On my way, I restored the corners in township 27, range 7, and township 28, ranges 2, 3 and 6, and reached my destination on November 10.

Here I spent three days restoring the marks of this township, but failed to complete it owing to the condition of Assiniboine river, which was at the time full of ice, rendering it unfordable. One of my assistants with his party tried on the last day to cross it at a place where the ice had stopped during the night, but when in the middle of the stream the ice gave way under him, and it was with great difficulty that he extricated himself from his dangerous position. This was enough to scare his party who would not venture another trial.

Though not completed, there are only two or three sections in this township left unrestored, and these are mostly all situated on the banks of the river.

From this township I turned westward to the townships extending along the Canadian Pacific Railway between Saltcoats and Yorkton and whose resurvey had also been allotted to me, but after spending one day in each of three of these, viz.: townships 24 and 25, range 1 and township 25, range 2, I discontinued work, considering it a waste of time and money to re-mark townships where the land is all occupied and the survey marks in fair condition.

On November 21, the ground being frozen and the snow already nine inches deep, I decided to discontinue the restoration of survey marks and proceed to Foam Lake to make the traverse of the same, but after communicating with you on this subject, it was decided to abandon that survey. I therefore closed operations and discharged my party, leaving the outfit in care of Mr. Norman McDonald of Saltcoats for wintering.

During the course of my operations, I re-marked sixty-two townships, besides subdividing a part of a township.

In my restoration I endeavoured to re-mark at least two corners for every quarter-section in order to have it ready for intending settlers; however, in some cases when the land was occupied, this rule had to be departed from in order to avoid disturbance which the re-establishment of some corners might have caused, and therefore left them unmarked, but these may be considered as private survey work, and should be done at the expense of interested parties.

Before closing this report, I might also add that whenever the original monuments could not be found, and reference is made to them on plans as being 'unfound,' these were generally temporarily marked on the ground with a wooden post (un-marked), indicating the approximate position of such corners. However, I must say that this was done only for townships where wood could be obtained within a reasonable distance.

On December 1, I arrived in Ottawa and reported to you the next day.

I have the honour to be, sir, your obedient servant,

P. R. A. BELANGER, *D.L.S.*

APPENDIX No. 13 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF J. J. DALTON, D.T.S.

SURVEY OF TOWNSHIP LINES NORTH OF BATTLEFORD.

MILTON, ONT., February 15, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following report on the surveys performed by me during the past season, under your instructions of March 31, 1903.

The work allotted to me was to run the meridian outlines of townships 52 and 51 in ranges 16 to 21, all inclusive; townships 49 and 50, ranges 19 and 20; townships 53 and 54, range 24; township 54, range 25; townships 55 and 56, ranges 24 to 27; the base line to north of the latter townships and the townsite of Lloydminster, all the foregoing being west of the 3rd meridian. Besides the above, I restored the survey of the 15th base line across ranges 5 to 8, and ran all the meridian boundaries of these ranges south to Saskatchewan river.

I left home for the field of survey on April 4, and arrived at Winnipeg on the 6th (train seven hours late). I transacted some business here necessary for my survey, and then went to Brandon, where I arranged for the shipment of my carts, then pushed on to Prince Albert, where I met Mr. Saint Cyr, the surveyor appointed to run the 14th base line, from which I was instructed to commence my work.

It was most difficult to find suitable horses, for they were very scarce and expensive; but the greatest of annoying delays was the utter impossibility of getting freight over the Canadian Pacific Railway owing to the enormous over-crowding of its various lines. Another difficulty of the present time is to obtain men of the proper qualifications. One may explain the difficulties and hardships of a survey as graphically as possible, still these men come with the greatest importunity, with recommendations and all, declaring that the life is just to their liking, but as soon as the novelty of the situation wears off they seem to think only of getting away, and with the greater pleasure at the inconvenience to the surveyor.

Owing to these various inconveniences, I was not able to leave Prince Albert until May 4 (noon), and travelled about eleven miles that day. I overtook Mr. Saint Cyr at Carlton, and accompanied him through to his starting point (township 52, range 22, west 3rd meridian), and while waiting for my own starting point I made a creek crossing and trained my men carefully in their various duties, and then I followed Mr. Saint Cyr along the base line to the northeast corner township 52, range 21. At this point, on May 27, I turned off the angle and ran south one and a half miles after chaining one mile on the base line, and completed the line on June 2.

I ran successively the boundaries of each range until that of the 17th, where I could only run two miles owing to the obstruction of Midnight lake. From this point I went east to run the boundary of range 16, believing it to be more economical to finish along the base line and then go around to the south to finish the boundary of range 17, then to take the much more laborious way of following around Midnight lake and completing range 17 first, which would involve four or five days unnecessary and very hard travelling.

In moving around to reach the northeast corner of township 52, range 16, I followed Mr. Saint Cyr's trail, and passed in to the east of what is known as Long lake, finding myself in range 15, and the township corner somewhere in the said lake. It

SESSIONAL PAPER No. 25a

was necessary then to run south on a sub-dividing line, which in this case was the east boundary of section 32. I ran this line several miles; then I found it necessary to make a right-angled traverse to arrive at the required boundary.

This part of the work was most discouraging to the men, and almost disastrous to the horses owing to the swamps, rain and flies. We suffered further difficulties from the same as we progressed, but completed the line on July 11. I then moved west to run the chord across range 17, preparatory to running its east boundary, as Midnight lake could not practically be triangulated. I tried to observe on the evening of my arrival but it proved too cloudy, nor was observation possible while running this line. I observed successfully though when at the east end of the chord and ran north to Midnight lake and south to the correction line. On the following morning (21st) I moved my camp into the southerly part of township 49, range 18, in order to run the east boundary of range 19. At this point I met Mr. Gore, D.L.S., who informed me that he had already run the east boundary of both ranges 19 and 20, so I sent to Jackfish for the balance of my supplies in store there, intending to go west on the morrow. However, heavy rains prevented any further move until the 25th, when after much difficulty I arrived at the crossing of Turtle lake creek, where heavy rains delayed me another day. On the 29th I arrived in township 53, range 23, and after some difficulty I found some cutting on the old line, and the next morning two monuments also on the base line. Taking up the east boundary of township 52, range 24, I produced it north, and then corrected this by observation.

On July 15, I sent a team to Prince Albert for supplies, and on account of its non-arrival, on August 3 I sent a team to meet it as it was now six days overdue, and the supplies were running short. Owing to this discomfort I was able to employ my party only the half of each day, and on the 8th, the teams not yet arriving, I started (myself) with the buckboard and a man to go to Battleford if necessary to buy supplies. Arriving at Jackfish crossing (70 miles from camp) on Sunday, 9th, at noon, I saw my team coming in the distance. The cause given for delay was heavy rains and a sick horse, which to all appearances was plausible enough. I took the necessary supplies and hastened to return, arriving on the 10th. On the 12th I finished my line, and the teams arrived on the 13th. I moved camp on the 14th in what was (owing to the high water rendering one of the creeks impassible) a round about course to township 54, range 25. We had heavy rains on the morning of the 15th, but in the afternoon I was able to explore for the old survey lines. On the 17th I commenced the line, moved camp five miles through bush and observed. Completing the line on the 21st, I moved towards Onion Lake village, which the next day I passed, and going north camped at noon, and spent the balance of the day in exploring for a road. The following week was also spent in searching for a way to reach the northwest corner of township 56, range 27, but I was unsuccessful. The week was very much broken with rains.

I wired you advising a postponement of the survey, which you granted, and sent me to outline the townships west of the fourth meridian, from which I was recalled to survey the townsite of Lloydminster. On arrival at this place on September 25 I proceeded at once to search out the land marks, make posts and general preparations for the survey of the townsite.

Although I had both wired and written to have my letters forwarded to Lloydminster by first mail, they did not arrive. My horses were sick, and generally too worn out to make the trip in any reasonable time. Mr. Lloyd having urgent business in Battleford kindly undertook to care for my mail. I thought it much more advantageous than sending my own team. I therefore entrusted him to bring me your instructions.

Many of the colonists complaining that their land marks could not be found, I spent all my spare time in restoring their lines while waiting the arrival of my instructions, but as iron posts were limited in number, I confined myself to running the lines, re-digging the pits, &c., without planting iron posts.

4-5 EDWARD VII., A. 1905

Your letter of instructions was received on the night of October 5, and the measurements of the townsite were finished on the 15th. Then, under your further instructions, I resumed the outline survey west of the fourth meridian. On November 13 I discharged all those of my party whose homes were in the Egg Lake settlement, and commenced my return to Prince Albert with my cook and two men. The journey was tedious, for several of my horses were still sick, and I was overtaken with snowstorms, and was obliged to travel by rougher roads than I should have otherwise done, in order to secure fodder for my horses.

Several times we had to camp at Doukhobor villages, the inhabitants of which were very kind to us, helping in every way possible such as caring for my horses, providing straw for and helping with the tents, &c. I was delighted, too, with the care that they bestow on their live stock, and pleased also with the good fortune of some of the contracting surveyors' horses, which were fortunate enough to be wintering at one of these villages.

I arrived at Prince Albert on the evening of December 8, and after settling accounts, arranging sale of horses, storing outfit, &c., I departed for home, arriving there on December 18.

Throughout the district of survey I saw no minerals, stone quarries, coal, lignite nor petroleum, but I think that mill sites might be obtained on Turtle Lake creek. Game is not plentiful; we saw a few deer, one bear, and frequently prairie chicken, wild duck and hares.

I have the honour to be, sir, your obedient servant,

JOHN J. DALTON, *D.T.S.*

SESSIONAL PAPER No. 25a

APPENDIX NO. 14 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF LOUIS E. FONTAINE, D.L.S.

SURVEYS IN SOUTHERN ALBERTA.

LÉVELL, P.Q., March 14, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following report of my field operations in southern Alberta, in accordance with your instructions, dated the 31st day of March last.

On receipt of your instructions, I made a few preliminary preparations, and then left for Edmonton in order to obtain my outfit, left there the previous fall. From Edmonton I went to Pincher Creek, where I organized my party, and left on the 1st day of May for township 8, range 29, west of the fourth meridian, where I was to begin the season's operations. From this date, township subdivision work was carried on until the 11th day of November, when, owing to the heavy snow, I decided to close the season; I therefore took the party to High River, and disbanded it on the 13th of that month.

During the course of the season, subdivision was performed in thirteen different townships, making a total mileage of 272 miles, and as a separate detailed report has been made for each township, I will here give but a brief description of the territory in which the operations were carried on.

The territory covered during the season was situated entirely in the Porcupine Hills. It is a succession of ridges of various height, with intervening coulees and small valleys, and containing in most of its principal depressions the bed of a small stream or rivulet. The soil is in general a rich loam on a clay subsoil, but its value for farming purposes is very problematic on account of the limited area of level land and the prevailing early frosts.

This region is easy of access from the south by good trails from Cowley, a distribution point on the Crow's Nest Pass Railway, and also on the east from most of the station points on the Calgary and Edmonton Railway.

In conclusion, I may say that ranching would be the best occupation for those settling in this region, as there is good shelter afforded by the hills for the cattle, the grass is rich and abundant, and the water supply is permanent.

Before closing this report, I must say that I take great pleasure in recording my appreciation of the ability and good-will of my assistant, Mr. Maitland L. Gordon, in performing his share of the work.

I have the honour to be, sir, your obedient servant,

LOUIS E. FONTAINE, D.L.S.

APPENDIX No. 15 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF ERNEST W. HUBBELL, D.L.S.

RE-SURVEYS IN NORTHERN ALBERTA.

OTTAWA, January 4, 1904.

F. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following general report of my field operations during the past season in northern Alberta, in compliance with your instructions, dated March 27, 1903.

I left Ottawa April 9 and arrived in Winnipeg on the 11th, where I delivered your order to the Manitoba Cartage Company for one hundred iron posts, with the written request to forward thirty of them by express to Wetaskiwin, having learned that freight traffic was in a state of congestion and the delivery of freight in that district uncertain. I arrived at Edmonton on the 16th, purchased my survey supplies, and left for Wetaskiwin on the 18th, where I organized my party, and received from Mr. Viau seven of the nine survey horses which he had wintered for Mr. Fontaine, D.L.S., (two having died during the winter).

These seven horses were in such a wretched condition that they were unable to haul the wagons and camp equipage to my camp, distant one-half mile from the station. I therefore decided to commence work on the spot, *i.e.*, the re-survey of township 46, range 24, west of the fourth meridian; by so doing my horses would have a chance to recuperate, otherwise to move camp it would be necessary to purchase a new lot. Only five proved to be useful; of the remaining two, one died in the street of Wetaskiwin and the other, being cared for by a farmer for six months with no good results and no possibility of any, I gave him in payment for the trouble and expenses therewith. I, however, with your consent, purchased one good serviceable team, which gave entire satisfaction.

On April 20, I pitched camp on section 14, township 46, range 24, close to the town of Wetaskiwin, and on the 22nd commenced the re-survey of this township, beginning at the northeast corner of section 17. Beginning field work so early in the spring, a great part of this township was covered with snow, and there was also considerable ice in the numerous sloughs, which were quite deep. Consequently, several corners were inaccessible, although shown to be on dry land in the original survey notes. I retraced all this township with its outlines (sixty-six miles), and renewed corners wherever found, making several in water, which was ten to eighteen inches deep. This township, being fenced, no deviation was permitted from following the road allowances, which, being very muddy, made progress very slow. This township is all settled, has fine buildings and is well under cultivation. The town of Wetaskiwin is situated on section 14.

On May 7 we finished all the re-posting which, under the circumstances, could be done, and on the 9th, with the assistance of an extra team of horses, moved camp twenty-five miles to Stony creek, section 21, township 46, range 20, the trails being in far better condition than in the early spring, and a little grass was commencing to grow.

On May 11, I commenced the re-survey of township 46, range 20, beginning at the northeast corner of section 21. Many of the corners were difficult to locate, and

SESSIONAL PAPER No. 25a

the original surveyed lines so overgrown with second growth poplar and willow that it necessitated re-cutting, and all the lines had to be chained as carefully as on an original survey. This township is about one-half covered with small poplar and willow and divided in about the centre from north to south by Stony creek, a stream three feet deep, with banks in many places one hundred feet or more high, in which in places seams of lignite coal can be seen. The soil is of good quality, and the township is nearly all settled, with an excellent class of well-to-do farmers. On the 18th and 19th we had a continuous snowstorm, which covered the ground in many places to the depth of twelve inches, suspending work and traffic for a few days. On the 27th, I finished the re-survey of this township, and moved camp to Driedmeat creek, section 16, township 45, range 19. From this camp I finished the re-survey of township 45, ranges 19 and 20, which lie to the north of Battle river. Wherever there was bush the lines had to be re-opened, and in all cases the distances between survey monuments chained. Even with these precautions many of the corners were difficult to find, the pits being filled and the posts almost destroyed by fire or rot.

On June 10, we finished work in this vicinity, and moved camp to section 16, township 45, range 18, which I proceeded to re-survey, completing the same by June 24. We were delayed somewhat in our work by the almost incessant rain. This is a fine township, and well settled. From here I moved camp on June 25 to township 45, range 17, and finished the re-survey of same by July 7. On the east boundary of section 9, running south, I found the quarter-section measured but thirty-seven chains. I made no correction, as the land on either side is patented and owned by the same man. As usual, we had considerable rain whilst at work in this township.

On July 8 we moved camp into township 45, range 16, and completed the re-survey of the same by the 18th. There are but few settlers in this township, which is well adapted for mixed farming, the soil being first class.

On July 20 we moved camp into township 46, range 15, and completed the re-survey of same and outlines by August 1. This township was very wet and swampy, many of the corners being in water two to three feet deep. Although well adapted for settlement, apparently no settlers had taken homesteads.

On August 4 we moved camp into township 46, range 16, and completed the re-survey by August 12. This township is also wet and swampy, and many of the lines had to be re-opened. There is some fine poplar timber in the northern part and the township is well adapted for settlement.

On August 13 we moved camp into township 46, range 17, and completed its re-survey by August 27. We were delayed considerably in our work by rain. This township is well suited for settlement, there being plenty of wood and water; soil mostly good black loam. On the 28th we moved camp into township 46, range 18, and completed the resurvey of same by September 10. As usual, rain fell nearly every day; consequently, work was most disagreeable. On the 3rd we had a slight frost, the first of the season. There is considerable small poplar in this township, the soil being first class. On September 11 we moved camp to section 15, township 46, range 19, and completed the resurvey of same by the 21st. This township is fairly well timbered with small poplar and willow and has numerous ponds and large sloughs, many of the corners being in water. On September 12 we had the first flurry of snow.

On the 22nd we took a flying camp into township 45, range 18, for the purpose of replacing the wooden posts (which we had temporarily planted) with iron ones, not being supplied with these at the time of the resurvey. On September 23 we moved our flying camp into township 45, range 17, and replaced the wooden posts with iron ones.

On the 25th, in the midst of a snowstorm, we moved camp to township 46, range 21, the trails being muddy and heavy, especially across Stony Creek. On the 27th we commenced the resurvey of this township and completed same by October 12. This township is all settled, has forty-eight river lots (which required re-posting), is partly

4-5 EDWARD VII., A. 1905

covered with poplar and willow, and has numerous large ponds and deep sloughs. Many of the corners were very hard to find; altogether it was a trying and difficult township to resurvey.

On October 13 we moved camp to township 45, range 21, and finished the resurvey by October 26. The township is well settled, principally by Norwegians, who, being thrifty and resourceful, make splendid settlers. From here I moved camp into township 45, range 20, which I resurveyed, also the portions of township 46, range 20, and township 45, range 19, lying south of Battle River. I had completed to date the resurvey of fourteen townships with corresponding outlines or, roughly speaking, retraced about 800 miles of survey lines.

As cold weather was commencing, I decided not to attempt the resurvey of township 44, range 26, included in my allotment of work, but to complete the subdivision of township 52, range 12 west of the fourth meridian, as requested by you, and on November 3 we moved camp via Wetaskiwin en route for this township, where I arrived on November 14 and commenced work the next day by opening the north boundary of sections 21 and 22. I then completed the unsurveyed lines in this township and traversed some lakes. On November 30, not being properly equipped for winter work, and the snow being too deep for wagons, I could not, without much labour, move camp over the hilly frozen ground covered with heavy windfalls, and was therefore compelled to leave unfinished a few of the lakes that required traversing, and on December 1 started for Edmonton, where I arrived on the 5th, after a disagreeable trip of 125 miles. I then stored my outfit and horses for the winter with Mr. E. Stanton, a rancher who lives four miles out of Edmonton, paid off my party and arrived in Ottawa on December 15, reporting for duty at your office on the following day.

REMARKS.

1. *Schools*.—All the settled townships in which I worked are provided with excellent schoolhouses.

2. *Game*.—Duck, geese and prairie chicken were most plentiful; in fact, the surrounding country was a sportsman's paradise.

3. *Survey Monuments*.—During the season I renewed about 450 section corners, and found only seventeen iron section posts in the ground. Most of the original corners were in very bad shape, the posts burnt or rotted, and the pits filled, making it almost impossible for settlers to locate homesteads, and owing to the great quantity of rain which fell during the season, all the ponds and sloughs were very deep; many of the original corners, which are in the original survey shown on dry ground or in marshes, were in water two to three feet deep. When these corners were not found, I re-established them by witness mounds or trenches, having reported the circumstances to you and obtained your endorsement to my suggestions that this should be done; neither did I renew witness mounds for quarter-section corners.

I have the honour to be, sir, your obedient servant,

E. W. HUBBELL, D.L.S.

SESSIONAL PAPER No. 25a

APPENDIX No. 16 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF A. W. JOHNSON, D.L.S.

SURVEY IN NEW WESTMINSTER DISTRICT.

HARRISON LAKE, B.C., June 24, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following report of my operations in New Westminster district during the season of 1903.

A beginning was made in township 3, range 30, west sixth meridian, on Queen's island and the adjacent islands and bars. This is good cottonwood bottom land, but subject to flood during exceptionally high water, and is cut away a good deal every year. New bars are constantly forming, and old ones washing away. On the completion of the work here we canoed down to Sumas lake, which at this time of year (March) is separated from the vegetation on its shores by a mile of mud. The work consisted largely of locating old lot boundaries. These lots were in many instances surveyed thirty years ago, and being wholly under water three or four months every year and a swamp for the remaining eight or nine, have lost nearly all their original corner posts. Occasionally we found an old fence corner, or even a row of old fence posts which evidently stood on the original boundary, but in some cases even these were not available, and I had to depend entirely on the old notes and the topography as shown in them. I spent a great deal of time over this old work in townships 19, 20, 22 and 23, east of the coast meridian, and in many places planted cedar posts eight or ten feet long and ten inches square at corners. I don't think that these will be washed out for many years.

We then moved by water to Harrison river, and after running a few lines and doing some traversing in the northeast part of township 3, range 30, west sixth meridian, started up the Chehalis canyon to get at the north limit of the railway belt. Chehalis creek follows a canyon from the lake to within two miles of its discharge into Harrison river, a distance of some nine miles. In this space it falls considerably over twelve hundred feet. The walls are precipitous, often perpendicular, in places four hundred feet high, so that it is not easy to get up with a canoe. Our first attempt ended in a broken canoe and a transit under water, but later when the creek was lower we did get up, and ran a stadia traverse to check the section lines run up the valley. The whole district is heavily timbered, and nearly all taken up. As far as I know it is the finest bunch of timber in the railway belt. The fir and cedar often are as much as ten feet in diameter, and I saw one fir that was fifteen. The only land that could be called good lies at the north end of Chehalis lake, but it is quite inaccessible at present for settlers.

In the middle of August we went to Harrison Hot Springs and began a traverse of the east side of Harrison lake, first retracing the southeast quarter of section 13, township 4, range 29, west sixth meridian. The centre of this section was our starting point. I also ran a triangulation up the lake to check the other work. There is some good land on Trout lake in township 4, range 28, but heavily timbered and very hard to clear. I went as far as the north limit of the railway belt on the east side of the lake, at the north boundary of township 7, and placed section corners and ran what lines I could on the way.

4-5 EDWARD VII., A. 1905

Wet weather put an end to our work here, and on November 1 we left for Mamette lake in the dry belt. We lost an engine in the Fraser canyon on the way up, but were only delayed a day on that account, and got to work on the south limit of the railway belt in township 17, range 21, west sixth meridian, on the 6th. We ran twenty-five miles of the limit before coming in for the winter on December 16.

I have the honour to be, sir,

Your obedient servant,

ALFRED W. JOHNSON, *D.L.S.*

SESSIONAL PAPER No. 25a

APPENDX No. 17 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF G. J. LONERGAN, D.L.S.

RE-SURVEYS IN THE EDMONTON DISTRICT.

BUCKINGHAM, QUE., April 10, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following report of a re-survey in the Edmonton district, west of the fourth meridian, under your instructions dated April 1, 1903.

I left Ottawa on April 14 and went to Pincher, where I secured my personal effects of the previous year and had them shipped to Stratheona, where I purchased horses and supplies. I experienced some difficulty in buying horses, the inrush of settlers creating considerable demand for them, as well as the prevailing idea amongst the people that the government is rich and should not object to paying about fifty per cent more for an article than it really is worth. On April 28, I started from Stratheona for township 54, range 20, and after much hard work pulling through the mud I arrived on April 30.

On the following day I commenced to trace up old lines with a compass and by following old cuttings, but finding so many old posts missing I was obliged to use a transit and carry on a survey, connecting all lines by angles. Sections 7, 18, 19 and 30, are the only sections in which the land has anything of a promising appearance. The remainder of the township is rolling with light sandy soil and contains numerous lakes of from ten to fifteen chains in width with some over half a mile, and many muskegs and sloughs.

Township 55, range 20.—I re-surveyed the south half of this township. One settler had located that spring on section 12, and said that he was thinking of abandoning his homestead as he considered the soil no good. A few settlers were living in the southwest corner of the township, and appeared to be making a fair living. The township is thickly wooded with poplar and willow scrub with a few tamarack swamps, and in places scattered clumps of poplar six to eight inches in diameter. I completed the survey of the south half of the township, and reached Fort Saskatchewan on May 27. On the following day I purchased supplies and started for township 57, range 21. The southeast angle of this township was marked by an iron bar placed in the bed of Red creek, but it could not be found. I re-established the corner from two bearing trees and ran westerly along the old cutting, and at a distance of five miles I found the first old post. Very few of the old posts were found in the township, those that were, being on the east and northeast part of it where the land was low and swampy. Four settlers only had located in township 57, range 21, and that part of 57, range 20, that is on the west side of Saskatchewan river. The soil for the most part is gravel or sand, three or four sections only were favoured with a little sandy loam.

While at work in these two townships the continual rains filled every hollow with water and the banks of Red creek overflowed and in places it was three-quarters of a mile wide and remained that way for four weeks.

On August 3, under your further instructions, dated July 9, I made a traverse of the lake in sections 27 and 28, township 57, range 23, west of the fourth meridian.

4-5 EDWARD VII., A. 1905

When this was completed I returned to the re-survey of township 57, range 20. This part of the township is thickly settled and the soil is good.

Township 57, ranges 18 and 19.—In these two townships very few old posts were found. The soil is light and sandy, and over fifty per cent of the area is sloughs, marshes or muskegs. All through my work I found it necessary to use a transit. The old cut lines could be followed only in places and most of the old posts were not to be found, and generally speaking, the only result of the previous survey was to give a little more work looking for posts that could not be found.

I have the honour to be, sir,

Your obedient servant,

G. J. LONERGAN.

SESSIONAL PAPER No. 25a

APPENDIX No. 18 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF JOS. E. ROSS, D.L.S.

SURVEYS IN THE RAILWAY BELT IN BRITISH COLUMBIA.

KAMLOOPS, B.C., January 25, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following report on my past season's operations in the railway belt in the province of British Columbia.

The first work of the season was a traverse of the Columbia river from Golden to the southerly limit of the railway belt. The Columbia river valley having previously been surveyed into sections, I connected with all the section corners I could conveniently find. The survey was made in winter in order to take advantage of the ice. If done at another season of the year it would have been a long and tedious operation, as the banks of the river are covered with a dense growth of small timber and brush, and the land along the river is nearly all low and marshy, much cut up with sloughs, and subject to overflow at high water.

From here I went to Sicamous and made a number of small surveys between that point and Kamloops. This work consisted mostly of re-survey of old provincial lots and connections with the Dominion lands system. I also ran a few section lines, being an extension of the Dominion surveys, to include a few outlying patches of land, fit for settlement, which had been overlooked in the original surveys. The only difficulty in connection with this work was that some of the lot boundaries could not be found on account of the corners not being permanently marked on the original provincial survey. One lot near Kamloops and several on the North Thompson river could not be located.

My next work was a survey of the southerly limit of the railway belt from the Spallumcheen valley to the Okanagan valley. The country traversed is mostly rough and mountainous. There are a few sections in the Spallumcheen valley near the mouth of Trinity creek that are suitable for farming purposes. The drawback at present is the lack of a road to connect with the adjacent settlements, and the barriers that lie in the way of constructing such a road, as the river lies on one side and the mountains on the other. I saw only a few patches of good timber on the whole survey. In places the timber has been completely burned off.

On finishing the work here I went to Grande Prairie, a settlement on the Salmon river. The work here was mostly re-survey of old provincial lots, but a few section lines were added to the previous Dominion survey to meet the requirements of settlers.

From here I went to a point on the west side of the Thompson river about ten miles below Ashcroft, where I surveyed a few section lines and retraced old provincial lot boundaries in order that some sections which had been applied for could be dealt with. The same difficulty presented itself in connection with the survey of these lots, and some of them could not be located. The country is mostly open with some patches of good land on the benches. The climate being dry, the value of the land depends on whether water can be obtained for irrigation purposes or not.

On finishing here I crossed to the east side of the river and ran a survey from a point near Spatsum into the Highland valley. There are some good wild hay meadows here. These meadows have been improved, and have a considerable number of build-

4-5 EDWARD VII., A. 1905

ings on them, mostly cattlesheds. The hay has been cut by cattlemen for a great many years. The lands could not be dealt with for want of a survey. There is plenty of wood for fuel and building purposes but very little merchantable timber. The valley is about 3,000 feet above Thompson river. The land outside the meadows is not fit for agricultural purposes.

The summer was so wet during harvesting time that many of the farmers lost a portion of their crops, but this is something unusual for this part of the province.

I have the honour to be, sir,

Your obedient servant,

JOS. E. ROSS.

SESSIONAL PAPER No. 25a

APPENDIX No. 19 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF ARTHUR SAINT-CYR, D.L.S.

SURVEY OF BLOCK OUTLINES WEST OF THE THIRD MERIDIAN.

LESSER SLAVE LAKE, April 20, 1904.

E. DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit my report on the survey of the 14th base line and meridian exteriors in the district of Saskatchewan during the season of 1903. The initial point of my work was the northeast corner of township 52, range 22, and the survey of the 14th base line was continued as far as the northeast corner of township 52, range 5, established by a previous survey.

The township outlines were those of townships 49, 50, 51 and 52 in range 13, situated in the Thickwood hills; also of townships 49, 50, 51 and 52 in range 9, lying west of the valley of Shell river; all west of the third meridian.

In compliance with your letter of March 8, requesting me to close my survey of the principal meridian in northern Manitoba, I went to Winnipeg, when on receipt of your instructions I proceeded to Prince Albert where I was to organize my party.

On April 28, I left for Emmaville, crossing the north branch of the Saskatchewan at old Fort Carlton, after which I followed the old cart trail to Battleford, passing on my way through the Doukhobor settlement near Prairie creek and Redberry lake.

Shortly after leaving Carlton crossing, the trail led across a tract of country which had been overrun by prairie fires late in the previous fall, and where the only available feed for horses was to be had at the Doukhobor villages. Wherever we stopped for lunch or camp, these people showed a readiness to give assistance without even being so much as asked for it, and they cheerfully brought for our horses hay and oats, of which they had a good supply. They also made us presents of butter, eggs, milk and vegetables, and showed us many other acts of kindness which proved that with them hospitality is considered a cardinal virtue. The youngsters who used to gather in numbers at our camping places were cleanly and good-natured, and it required very little persuasion to put them in a talkative mood, when would begin a regular flow of questions about the names and uses of every article which they saw around the camp. It was no small pleasure to watch the bright upturned faces of those children, ever eager to learn. These villagers have now abandoned the huts in which they spent their first winter in this country for more commodious and larger buildings, which they keep scrupulously clean. Each building is divided into two large rooms, one contains a loom, a spinning wheel and might be called the work room; the other, much the larger, is intended as a living apartment; on two of its sides are high, broad benches for reclining during sleeping hours. In the day-time, the bedding being taken out of doors, these benches are used as seats. In every building a Russian stove does the work of oven and heater. On its outside are many shelves which can be put to different uses. I have sometimes sat at their tables and enjoyed the meals which consisted of good wholesome food, though meat of any description was conspicuous by its absence. The bread, sponge-like, was always served hot from the oven and was delicious. These villagers are people of their word: whenever they had promised to bring us any supplies they were always found at our camp long before we were quite ready to start and never caused us any delay. They take the greatest care of their

4-5 EDWARD VII., A. 1905

horses and cattle, which are always in prime condition and kept in large roomy stables. Whenever the labourers return from the field, their wives come out to meet them. At the time of my passing they were busy preparing their land for seeding. Battleford was passed on May 15 and three days later I reached the prosperous settlement of Jackfish lake, which was to be my post office for the early part of the season, and there made a depot for my supplies. The country around Jackfish is very beautiful, especially along its eastern side; here a short distance from the lake rise a succession of hills on whose slopes could be seen hundreds of cattle grazing, whilst the bottom lands in the immediate vicinity of the lake were being put under cultivation. During the winter season, these cattle are driven north towards the timbered and hilly country near Birch lake where on the extensive hay meadows, which exist there, hay has been cut and stacked for them and the forest protects them from the cold north winds. No stabling is provided for them as it is not thought necessary.

On the north side of the lake the country is rolling and the soil of the best and, as early frosts are unknown in the neighbourhood of the lake, cereals and vegetables are successfully grown.

From Jackfish lake settlement I returned to the old Fort Pitt trail which I followed till well beyond Whitemud lake, where I took a newly opened wagon trail leading in a northwesterly direction towards Ennerville post office, west of Englishman river and within five miles of the northeast corner of township 52, range 22, the initial point of my survey.

I have the honour to be, sir,

Your obedient servant,

ARTHUR SAINT-CYR.

SESSIONAL PAPER No. 25a

APPENDIX No. 20 TO THE REPORT OF THE SURVEYOR GENERAL.

REPORT OF J. N. WALLACE, D.L.S.

SURVEY OF TOWNSHIP OUTLINES IN ALBERTA, WEST OF FIFTH MERIDIAN.

CALGARY, ALTA., February 1, 1904.

E DEVILLE, Esq.,
Surveyor General,
Ottawa.

SIR,—I have the honour to submit the following report of my field operations last season during the survey of township outlines in Alberta, in accordance with your instructions of March 31, 1903.

I commenced to organize my party at Calgary on April 20, and having completed the greater part of this business, I left Calgary for Innisfail on the 25th. After travelling westerly from Innisfail some fifty miles, I reached the north-east corner of township 36, range 7, on May 1. I commenced work here in order that the outlines across Clearwater river might be run before the time of high water. Between May 1 and June 11 thirty-six miles were run, forming the east outlines of townships 35 and 36, ranges 6, 7 and 8. The summer floods from the snow in the mountains being now about due in the numerous large rivers crossed by the outlines to the south, it was not considered advisable to continue the work in a southerly direction till later in the season.

On June 12 I started for the northeast of township 40, range 6, and reached there on the 16th, after travelling nearly sixty miles. This district is some twenty miles northeast of the former Hudson Bay Company's post, called 'Rocky Mountain House.' This locality proved a very difficult one to survey, both on account of its great distance from the nearest source of supplies and by reason of the very heavy timber with which the lands are covered. Spruce running to three feet diameter and averaging sixteen inches occurred for miles along the outlines. To add to the difficulties, the weather was very unfavourable. The work was much delayed, and with such a distance and such bad roads the matter of keeping the party in supplies became a very troublesome one.

On August 28 thirty-six miles had been run here. I had still a large amount of work to do further south, more especially to run the east outlines of townships 29 to 34, range 8, which form part of the east boundary of the Rocky Mountains Park of Canada. It soon became apparent that if the work further south was to be finished during the season, a move would have to be made to get there at once.

Accordingly, on August 29 I moved back southerly to the southeast of township 33, range 7, reaching there on September 8, after a journey of nearly one hundred miles. Here the country was much more lightly timbered, and although very rough and hilly, good progress was made, and all the outlines here were completed by December 9.

On December 10 I started homeward, having completed in all one hundred and fifty-seven miles during the season, all of which were original base and outlines, except a mile and a half of restoration survey. Calgary was reached on December 11, and I paid off the party next day.

The townships outlined may be divided into three districts. The first district extends from fifteen to forty miles southeast of the Rocky Mountain House, and comprises part of the valleys of the Clearwater, Raven and James rivers and of Bearberry

4-5 EDWARD VII., A. 1905

creek. The second is immediately south of the first, and extends to within about ten miles of Morley. The third is quite distinct from the other two, and comprises some townships about twenty miles to the northeast of Rocky Mountain House. Of these three districts, the first is very much the most suitable for settlement, while the third has the most valuable timber.

Outlines Southeast of Rocky Mountain House.

These, amounting to sixty miles, form the outlines of townships 33 to 36, ranges 6 and 7. There is a great deal of open land, especially in that portion between the James and Raven rivers, and also about the central part of township 36, range 6. The locality can be reached either from Innisfail or from Olds. The road from Innisfail is not quite as good as the other, but it has the advantage of a bridge over the Red Deer river. When travelling from Olds this river must be forded—a dangerous undertaking at certain seasons.

Settlement is rapidly advancing in this district, although at the time of survey there were not any settlers in it.

Outlines North of Morley.

These comprise sixty miles along the east of townships 27 to 31, range 7, and 29 to 32 in range 8. They are all in the region of the foothills, and the greater part of the district is very hilly. Some good land occurs in the valleys, but it would be necessary for intending settlers to select land individually, as no extensive agricultural area occurs. The best lands are in the south of township 27 in ranges 6 and 7.

The foothills region proper is bounded by a line running northwesterly from the middle of the east boundary of township 30, range 7, to the northwest corner of township 32 in the same range. From here the hills continue on northwesterly, passing about eight miles west of the northwest corner of township 34, range 7.

The region west of this line may be generally described as consisting of long ridges of hills, 400 to 700 feet above the valleys, the hills becoming higher as they go farther west. These ridges extend in a markedly parallel direction of north-northwest. Between the ridges are flat valleys, half a mile to a mile wide, quite open or else with a little scrubby timber. Many of these valleys are very swampy. The ridges are irregularly timbered with small pine and poplar with a dense growth of alders on their northern slopes.

The northeasterly part of the district is not nearly as rough as the southwesterly part. Open lands are not common. There is a heavy growth of spruce and jackpine running to sixteen inches extending across the east outline of township 31, range 7, just south of Red Deer river.

The only road through this district is that from Morley. It is fairly good as far as Little Red Deer river, but north of this it is unsuited for a wagon except in the fall and winter. The snow in all this region, from Morley to Rocky Mountain House, is very light in winter on account of the frequency of the warm winds from the mountains.

Outlines Northeast of Rocky Mountain House.

These comprise the east outlines of townships 41 and 42, range 6, and of townships 41 to 44, range 7. The timber is in places very heavy. The most extensive area of large timber in the township named is probably bounded as follows:—

On the southwest by a line running from the southwest of section 13, township 41, range 6, to the northwest of section 18, township 42, in the same range. The northeast boundary would probably be a line from the southeast corner of township 42, range 6, to the northwest corner of section 6, township 43 in the same range, and

SESSIONAL PAPER No. 25a

also further northwest. The timber is very large, and grows thickly. Spruce running to three feet in diameter was frequently cut down on the outlines. The average size would be about sixteen inches. Jack pine and balsam fir also occur of the same dimensions. There are also many detached areas of large spruce especially in the southwest of township 41, and the northwest of township 44, in range 6

Across the northeast of township 42, range 6, and for many miles to the north, the country has been devastated by fire within recent years, and the country is now a wilderness of standing burnt trees and huge logs piled over each other for miles. These logs make it impossible to get pack horses over the country. I could not therefore get my pack outfit far enough north to run the east of townships 43 and 44 in range 6. There is not much open land in this district. The value of the timber is much greater than that of the open land. Considering the inevitable fires which follow the smallest settlement and the abundance of good vacant land elsewhere, it seems very unwise that, for the sake of an isolated quarter-section here and there, settlers should be allowed to come indiscriminately into this district, and by their fires endanger thousands of dollars' worth of good timber. A moment's carelessness may destroy eighty or a hundred years of forest growth.

I have the honour to be, sir,

Your obedient servant,

J. N. WALLACE, *D.L.S.*

APPENDIX No. 21 TO THE REPORT OF THE SURVEYOR GENERAL.

EXAMINATION PAPERS OF THE BOARD OF EXAMINERS FOR DOMINION LAND SURVEYORS

EXAMINATION FOR ADMISSION AS ARTICLED PUPIL.

XXIII.

PENMANSHIP AND ORTHOGRAPHY.

Write a composition of not less than 200 words on "Surveying as a Profession."

ARITHMETIC AND LOGARITHMS.

<i>(Time, 3 hours.)</i>		Marks.
1. Prove the rule for converting a recurring decimal to a vulgar fraction.		14
2. Find values of $(23.426)^3$, $(.01256)^{\frac{1}{5}}$, $(24.785)^{\frac{2}{3}}$ by logarithms.		14
3. Show that the product of the <i>H. C. F.</i> and <i>L. C. M.</i> of two numbers is equal to the product of the numbers themselves.		14
4. Reduce 403.75 square yards to the decimal of an acre.		14
5. The assessed value of a town is \$4,857,600. The total taxes to be raised are \$81,500, of which the school tax exceeds the combined municipal and special tax by 25 per cent, the municipal tax exceeding the special tax by 25 per cent also. What is the rate of taxation for the special tax?		14
6. Find the numerical value of $\cos A \tan B \cot C$, when $A=32^{\circ} 18'$, $B=117^{\circ} 25'$, $C=187^{\circ} 16'$.		15
7. The logarithmic sine of an angle= 9.6523480.		15
“ “ cosine “ =—9.4287215.		
“ “ secant “ = 1.0456923.		
Find the angles accurately to the nearest second.		

SESSIONAL PAPER No. 25a

ALGEBRA.

(Time 3 hours.)

	Marks.
1. Find the H. C. F. of $x^2 + 5x + 6$, $x^2 + 7x + 10$ and $x^2 + 12x + 20$; and the L. C. M. of $x - 1$, $x^2 + x + 1$, and $x^3 - 1$.	14
2. A man has three nephews. His age is 50 and the joint ages of the nephews are 42. How long will it be before the joint ages of the nephews will be equal to the age of the uncle ?	14
3. Simplify $10a - 5 [3a - 4b - 7 \{ 2a + 5b - 3(a - b) \} + 5 \{ 2b + 4(a + b) \}]$ and $\frac{x + \sqrt{x^2 - 1}}{x - \sqrt{x^2 - 1}} + \frac{x - \sqrt{x^2 - 1}}{x + \sqrt{x^2 - 1}}$	14
4. Solve the equations : $\frac{3 - 2x}{1 - 3x} - \frac{2x - 5}{2x - 7} = 1$ and $\frac{4x^2 - 1}{7 - 16x + 4x^2}$ and $\frac{x}{a + b} + \frac{y}{a - b} = 2a$, $\frac{x - y}{2ab} = \frac{x + y}{a^2 + b^2}$	14
5. The product of four consecutive numbers is 93024. Find them.	14
6. How many minutes does it want to four o'clock, if three quarters of an hour ago it was twice as many minutes past two o'clock ?	15
7. A merchant bought a certain number of pieces of cloth for \$375, and sold them at \$18 a piece, and gained thereby 5 times the cost of one piece. How many pieces did he buy ?	15

PLANE GEOMETRY.

(Time 3 hours.)

	Marks.
1. Prove geometrically $(a + b)^2 = a^2 + 2ab + b^2$.	14
2. Describe a circle within a given triangle.	14
3. Show that the bisectrix of an angle of a triangle is less than half the sum of the sides including the angle.	14
4. If P is a point without a given circle, and PD a tangent to the circle, and PLA a straight line cutting the circle in L and A , show that $PD^2 = AP.LP$.	14
5. Similar triangles are to each other as the squares of their homologous sides.	14
6. The perimeter of a square is less than that of any other parallelogram of equal area.	15
7. If an angle of a triangle be bisected by a straight line cutting the base, the segments of the base are proportional to the two sides containing the angle.	15

PLANE GEOMETRY.

(Time 3 hours.)

	Marks.
8. Inscribe a circle in a given sector.	14
9. Divide a given arc of a circle into two parts which shall have their chords in a given ratio.	14
10. Prove geometrically for any triangle that $a^2 = b^2 + c^2 - 2bc \cos A$.	15
11. On a given straight line to describe a rectilineal figure similar and similarly situated to a given rectilineal figure.	14
12. If in a circle two chords intersect each other, then the product of the segments of one chord is equal to the product of the other.	14
13. If a straight line AD is divided equally at B and unequally at C ; show that $AC^2 + CD^2 = 2 (AB^2 + BC^2)$.	15
14. Inscribe a pentagon in a given circle.	14

PLANE TRIGONOMETRY.

(Time 3 hours.)

	Marks.
1. Find the sine, cosine and tangent of 45° and also of 60° , without the use of tables.	14
2. A flagstaff 30 feet high stands on the top of a cliff, and from a point on the seashore the angles of elevation of the top and bottom of the flagstaff are $52^\circ 17'$ and $47^\circ 28'$ respectively ; find the height of the cliff.	14
3. Show that $\cot (a - b) = \frac{\cot a \cot b + 1}{\cot b - \cot a}$	14
4. Show that $\sin (A + B) \sin (A - B) = \sin^2 A - \sin^2 B$.	14
5. Show that the area of a triangle $= \sqrt{s(s-a)(s-b)(s-c)}$.	14
6. Two sides of a triangle are 17 and 19, the included angle $42^\circ 13'$, find the base.	15
7. The three sides of a triangle are 15, 18, 21 ; find one of the angles.	15

SESSIONAL PAPER No. 25a

SPHERICAL TRIGONOMETRY.

<i>(Time, 3 hours.)</i>		Marks.
1. Prove that in a spherical triangle the sines of the sides are proportional to the sines of the opposite angles.		14
2. Show that $\text{Cos } a = \cos b \cos c + \sin b \sin c \cos A$.		14
3. Show that $\sin^2 \frac{1}{2} A = \frac{\sin (s-b) \sin (s-c)}{\sin b \sin c}$		14
4. Prove Napier's rules for the solution of right angled spherical triangles.		14
5. In a right angled triangle, the hypotenuse is $44^{\circ} 34' 30''$ and one of the angles $2^{\circ} 15'$; what is the other angle?		14
6. $A=62^{\circ} 18', B=74^{\circ} 16', C=80^{\circ} 10'$, find a .		15
7. $a=52^{\circ} 17', b=61^{\circ} 18', C=46^{\circ} 19'$, find c .		15

MENSURATION OF SUPERFICIES.

<i>(Time, 3 hours.)</i>		Marks.
1. The sides of a triangular field are 10°. 14, 12°. 16 and 14°.82. Find the area.		16
2. From the above triangle two acres are cut off by a straight line parallel to the shortest side. Find where it cuts the other sides.		16
3. How many square feet are contained in a regular pentagon whose side is 50 feet?		17
4. From a solid metallic sphere 10 inches in diameter, a hollow cylinder is made whose outside diameter is equal to its height. The thickness of the metal in the cylinder is one-sixteenth of an inch; what is the diameter of the cylinder?		17
5. Into a cylindrical vessel 8 inches wide and 6 inches high is placed, base downward, a right cone of metal with base 6 inches in diameter and 10 inches high. How many cubic inches of water does it now take to fill the cylindrical vessel?		17
6. What is the volume of a tetrahedron, with edge 4 inches?		17

EXAMINATION FOR ADMISSION AS ARTICLED PUPIL.

XXIV.

PENMANSHIP AND ORTHOGRAPHY.

(Time 3 hours)

	Marks.
Penmanship	50
Orthography	200
Write a composition of not less than 200 words on "The relative advantages of Surveying and other professions."	

ARITHMETIC AND LOGARITHMS.

(Time 3 hours.)

	Marks.
1. Simplify $\frac{1}{2 + \frac{2}{4 + \frac{5}{6}}} \times \frac{4862}{4147} \div \left(1\frac{1}{2} - \frac{23}{38}\right)$.	10
2. Find the square root of $76\frac{14}{7}$ to four decimal places.	10
3. Extract the cube root of $4\cdot23\dot{4}$ to three decimal places.	10
4. Reduce $(27\cdot3\dot{4}5 + 6\cdot4\ddot{2} - 17\cdot43\ddot{5}) \times 2\cdot3\ddot{6}$.	12
5. A watch set accurately at 12 o'clock indicates 10 minutes to 5 at 5 o'clock ; what is the exact time when the watch indicates 5 o'clock ?	13
6. A piece of work can be accomplished by A and B in 4 days, by A and C in 6 days, by B and C in 8 days. Find in what time it would be accomplished by all working together.	15
7. Find the value of the following expression with the aid of logarithms— $\frac{(\cdot002)^2 \times 1\cdot23 \sqrt{2}}{54\cdot8 \times \cdot257}$	10
8. Find the log. tang. of the angle whose log. cosec. is 10.2438765.	10
9. Find the numerical value of $\frac{\sin A \cos B \cot C}{\text{when } A = 91^\circ 13' 15''}$ $B = 18^\circ 17' 17''\cdot8$ $C = 102^\circ 34' 39''\cdot45$	10

SESSIONAL PAPER No. 25a

ALGEBRA.

(Time 3 hours.)

Marks.

1. Simplify the following expressions :

$$\left(\frac{a}{a+b} + \frac{b}{a-b} \right) \div \left(\frac{a}{a-b} - \frac{b}{a+b} \right)$$

$$\frac{\frac{1}{a} + \frac{1}{b+c}}{\frac{1}{a} - \frac{1}{b+c}} \left(1 + \frac{b^2 + c^2 - a^2}{2bc} \right)$$

$$\frac{x + \sqrt{x^2 - 1}}{x - \sqrt{x^2 - 1}} + \frac{x - \sqrt{x^2 - 1}}{x + \sqrt{x^2 - 1}}$$

15

2. Prove that

$$(a-b)^3 + (b-c)^3 + (c-a)^3 = 3(a-b)(b-c)(c-a)$$

10

3. Find the G.C.M. of

$$a^3 x^3 - a^2 b x^3 y + a b^2 x y - b^3 y^3 \text{ and } 2 a^2 b x^2 y - a b^2 x y^2 - b^3 y^3$$

10

4. Solve the equations

$$(a) \frac{1}{x-2} - \frac{1}{x-4} = \frac{1}{x-6} - \frac{1}{x-8}$$

$$(b) \frac{a x^2 + b x + c}{p x^2 + q x + r} = \frac{a x + b}{p x + q}$$

25

$$(c) 13x + 11y = 4a; 12x - 6y = a$$

$$(d) x + y + z = a + b + c$$

$$x + a = y + b = z + c$$

$$(e) xyz = a(yz - zx - xy) = b(zx - xy - yz) = c(xy - yz - zx)$$

5. Two persons A and B could finish a work in m days; they work together n days when A is called off and B finishes it in p days. In what time could each do it?

20

6. The difference of the squares of two consecutive numbers is 21. Find the numbers.

10

7. The hour and minute hands of a watch are at right angles to one another between two and three o'clock; what is the precise time?

10

PLANE GEOMETRY.	
(Time, 3 hours.)	Marks.
1. If one side of a triangle be greater than another, then the angle opposite the greater side shall be greater than the angle opposite the less.	12
2. If perpendiculars be drawn to two intersecting straight lines from any point between them, show that the bisector of the angle between the perpendiculars is parallel to the bisector of the angle between the given straight lines.	12
3. Describe a parallelogram that shall be equal to a given triangle and have one of its angles equal to a given angle.	12
4. In a triangle any two sides are together greater than twice the mediam which bisects the remaining side.	12
5. If a straight line is divided equally and also unequally, the sum of the squares on the two unequal parts is twice the sum of the squares on half the line and on the line between the points of section.	14
6. The square on any straight line drawn from the vertex of an isosceles triangle to the base is less than the square on one of the equal sides by the rectangle contained by the segments of the base.	14
7. Through a given point within a circle draw the least possible chord. Prove.	12
8. Draw a tangent to a circle through a given external point.	12

PLANE GEOMETRY.	
(Time, 3 hours.)	Marks.
9. Inscribe a circle in a given triangle.	12
10. Describe an isosceles triangle having each of the angles at the base double the third angle.	12
11. Show that the bisectors of the angles of any regular polygon are concurrent.	12
12. With three given points as centres describe three circles touching one another two by two.	12
13. If the vertical angle of a triangle be bisected by a straight line which cuts the base, the segments of the base are to one another in the same ratio as the remaining sides of the triangle.	12
14. In a right angle triangle, if a perpendicular be drawn from the right angle to the hypotenuse, the triangles on each side of it are similar to the whole triangle and to one another.	12
15. If two straight lines cut one another within a circle, the rectangle contained by the segments of one of them is equal to the rectangle contained by the segments of the other.	14
16. Construct a triangle whose angles and area are given.	14

SESSIONAL PAPER No. 25a

PLANE TRIGONOMETRY.

(Time, 3 hours)

Marks.

1. Write down the cosine of an angle in terms of its tangent and also in terms of its cosecant. 12
2. In a right angled triangle ABC , C being the right angle, find c in terms of A and b , and also in terms of B and b ; also A in terms of a and b , and b and c . 12
3. The angle of elevation of the top of a flag pole 120 feet distant is $28^{\circ} 35'$, and the vertical angle between the top and bottom is $34^{\circ} 42'$; find the height of the pole. 12
4. In any plane triangle prove the relation 12

$$a^2 = b^2 + c^2 - 2 b c \cos. A.$$

From it derive an equation for determining A suitable for log-arithmetic computation.

5. The angles A and B in a triangle are respectively $31^{\circ} 40'$ and $48^{\circ} 20'$; the perpendicular from C to the opposite side is 150 feet in length; solve the triangle. 14
6. The bearings and lengths of two lines running from a point are N. 70° E. 20 chs., and S. 50° E. 30 chs., respectively; find the length and bearing of the line joining their extremities. 12
7. A pole 20 feet high subtends an angle of $12^{\circ} 30'$ at a point that is 6 feet higher than the foot of the pole; find horizontal distance from the point to the pole. 14
8. From two stations A and B on shore the bearings of a ship at sea, observed simultaneously, are S. 27° E. and S. 35° W., the bearing and length of AB are S. 75° E. 870 yards; find the distance of the ship from A . 12

SPHERICAL TRIGONOMETRY.

(Time, 3 hours.)

Marks.

1. Show that the three sides of a spherical triangle are together less than four right angles. 14
2. What is a polar triangle? State and prove two of its properties. 14
3. State Napier's rules of circular parts, and apply them to derive formulae for the solution of a right angled triangle in which an angle and the hypotenuse are given. 14
4. In a right angled spherical triangle C being the right angle, given $A=147^{\circ} 02' 54''$ and $b=137^{\circ} 03' 48''$; find the remaining parts. 15
5. Two planes intersect at right angles, and through a point on their line of intersection lines are drawn, one in each plane, making angles of 30° and 50° respectively, with the line of intersection; find the angle between the two lines. 14

	Marks.
6. Prove the formula $\cos a = \cos b \cos c + \sin b \sin c \cos A$ and from it derive the formula $\sin^2 \frac{1}{2} A = \frac{\sin (s - b) (\sin s - c)}{\sin b \sin c}$	14
7. In a spherical triangle given $A = 33^\circ 15'$, $B = 31^\circ 34, 38''$, $b = 70^\circ 10' 30''$; solve the triangle.	15

MENSURATION.

(Time 3 hours.)

	Marks.
1. The perimeter of a triangle is 150 feet and the radius of the inscribed circle 12 feet ; find its area.	12
2. Find the circumference of a circle whose area is one acre.	12
3. Find the area of a segment of a circle, the length of the chord being 150 feet and that of the middle ordinate 40 feet.	20
4. Find the area of the triangle the length of one of whose sides is 12 chains and the two adjacent angles 42° and 36° , respectively.	12
5. Find the area in square miles of the portion of the earth's surface north of the paralel of latitude 70° , regarding the earth as a sphere whose radius is 3956 miles.	20
6. Find the area of a rectangular field whose diagonal is 8.40 chains, the inclination of the diagonal to the longer side being $35^\circ 25'$.	12
7. Find the area of the curved surface of a cone, the radius of whose base is 3 feet and whose altitude is 4 feet.	12

PRELIMINARY EXAMINATION. (LIMITED.)

X

FIRST PAPER.

(Time 3 hours).

	Marks.
1. Write a composition of not less than 200 words on— The winter climate of Canada.	
2. Prove the rule for converting a recurring decimal to a vulgar fraction.	8
3. What is the present value of an annuity of \$100 payable each year for the next twenty years, interest computed at 4 per cent.	9

SESSIONAL PAPER No. 25a

	Marks.
4. Solve the equation $(2\frac{1}{2})x + (6\frac{1}{4}) - x = 54\frac{1}{4}$.	9
5. Write down the fourth term of $(a-3b)^{12}$	9
6. Which of the following statements is more nearly correct ?	9
$\frac{10}{9.009} = 1.11$ or $\frac{10}{1.11} = 9.009$.	9
7. Solve by a geometrical construction the quadratic equation $x^2 - 4x - 3 = 0$.	9
8. Find the locus of a point whose distances from two given points are in a constant ratio.	9
9. Prove geometrically $c^2 = a^2 + b^2 - 2ab \cos C$.	9
10. To divide a given straight line in extreme and mean ratio.	9

SECOND PAPER.

(Time, 3 hours.)

	Marks
11. The locus of a point from which tangents drawn to two circles are equal is a straight line.	12
12. Prove that $\tan 2\theta = \frac{2 \tan \theta}{1 - \tan^2 \theta}$. Assuming that the tangent of an arc of $11\frac{1}{4}^\circ$ is greater than the arc, prove that the ratio of the circumference to the diameter of a circle is less than 3.2.	25
13. In a plane triangle having given $A=50^\circ$, $b=119$ chains, $a=97$ chains, find the other parts, and the area of the triangle.	13
14. If the sides of a triangle be 3, 4 and 5, find the radii of the three circles which can be drawn touching the sides.	13
15. State the rules for solving a spherical right angled triangle by the use of Napier's Circular Parts.	12
16. Give formulæ for volume and surface of a sphere, cylinder, cone and frustum of a pyramid.	12
17. In a spherical triangle $A=37^\circ$, $B=85^\circ$, $C=74^\circ$. Find one of the sides.	13

PRELIMINARY EXAMINATION (LIMITED).

XI.

FIRST PAPER.

(Time, 3 hours.)

	Marks.
1. Write a composition of not less than 200 words on :—Canadian Industries.	20
2. A man walks a certain distance and rides back in 3h. 45m. He could ride both ways in $2\frac{1}{2}$ hours. How long would it take him to walk both ways?	9
3. A person invests \$9,450 in $5\frac{1}{2}$ per cent stock so as to receive an income of \$787.50 —What was the price of the stock?	9
4. Solve $x^2 - 7x + 1' \sqrt{x^2 - 7x + 18} = 24$	9
5. Find that number whose square added to its cube is nine times the next higher number.	8
6. Prove geometrically $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$.	9
7. Prove that the angle made by a chord, drawn in a circle, with the tangent at its extremity is equal to the angle in the opposite segment.	9
8. Describe a circle to touch a given circle, have its centre in a given straight line, and pass through a given point in that line.	9
9. Extract the seventh root of .01436 and multiply result by $(1.27) 4\frac{3}{4}$.	9
10. Solve the equation $8^{-3x} = 12^{4-2x}$ having given $\log 2 = .30103$; $\log 3 = .47712$.	9

SECOND PAPER.

(Time, 3 hours.)

	Marks.
11. Find the area of the sector of a circle whose radius is 200 feet, the arc of the sector being 160 feet in length.	10
12. The diameter of the base of a cone is 10 inches ; find its altitude if the area of its curved surface equals that of a sphere whose diameter is also 10 inches ; also if its volume equals that of the sphere.	10
13. Derive the formula $a^2 = b^2 + c^2 - 2bc \cos A$ and from it the formula $\sin^2 \frac{1}{2} A = \frac{(s-b)(s-c)}{bc}$.	10

SESSIONAL PAPER No. 25a

	Marks.
14. A base line AB , 3.40 chains in length, is measured along the bank of a river, and also the angles ABC and BAC , C being a point on the other side; find the distance AC .	10
15. The sides of a quadrilateral are: $AB=11.20$ chs., $BC=13.60$ chs., $CD=9.75$ chs., and $DA=12.35$ chs.; the angle $ABC=75^\circ 40'$; find its area.	10
16. Find the area in square miles of the portion of the earth's surface between the parallels of latitude 40° and 60° N., and the meridians 60° and 80° W., regarding the earth as a sphere whose radius is 3,956 miles.	10
17. State Napier's rules of circular parts and apply them to derive equations for solving a triangle in which the two angles are given.	10
18. Prove the formula $\cos a = \cos b \cos c + \sin b \sin c \cos A$ and from it derive the formulæ $\frac{\sin A}{\sin a} = \frac{\sin B}{\sin b} = \frac{\sin C}{\sin c}$	10
19. In a spherical triangle, given $a = 127^\circ 17' 51''$, $b = 113^\circ 49' 31''$, $C = 109^\circ 10' 20''$, solve the triangle.	10
20. The angle of elevation of the top of a flag-pole 50 feet in height, observed at a certain point, is $18^\circ 25'$, and the angle of depression of its foot is $7^\circ 32'$; find the horizontal distance to the pole, and the height of the point of observation above its foot.	10

FULL EXAMINATION FOR ADMISSION AS SURVEYOR.

XXXI.

ALGEBRA.

(Time, 3 hours.)

	Marks.
1. Find the H.C.F. of $3x^5-10x^3+15x+8$ and $x^5-2x^4-6x^3+4x^2+13x+6$ and the L.C.M. of $a^2(b-x)^5c^7d$ and $a^3(b-x)^2c^4e$.	11
2. Simplify $\frac{x+\sqrt{x^2-1}}{x-\sqrt{x^2-1}} - \frac{1+x-\sqrt{x^2-1}}{x+\sqrt{x^2-1}}$.	11
3. Solve $x+y+z=a$, $2x+3y+4z=b$, $5x+6y+7z=c$.	11
4. The product of four consecutive numbers is 24024; find them.	11
5. Reduce to a common radical index $\sqrt[4]{7}$, $\sqrt[5]{5}$, $\sqrt[10]{120}$.	11
6. Solve $3^x + 1 + 9^x = 108$.	12
7. The difference of the squares of two numbers is 120, and their product 221. Find the numbers.	11
8. Solve $x^2 - 7x + \sqrt{x^2 - 7x + 18} = 24$	11
9. Solve $\frac{1}{x-a} + \frac{1}{x-b} + \frac{1}{x-c} = 0$. $25a-21\frac{1}{2}$	11

PLANE GEOMETRY.

(Time 3 hours.)

	Marks.
1. Prove geometrically $(a + b)^2 + (a - b)^2 = 2(a^2 + b^2)$	15
2. Prove that the interior angles of a triangle are equal to two right angles, and give a general expression for the sum of the angles of any rectilineal figure.	15
3. Through three given points only one circle can be drawn.	20
4. Describe a circle within a given triangle.	20
5. Determine the locus of a point whose distance from any point is double its distance from another given point.	20
6. Construct a triangle having each of the angles at the base double the angle at the vertex.	20
7. Express the distance between the centres of the inscribed and circumscribed circles of a triangle in terms of the radii.	20
8. Find a mean proportional between two straight lines.	20

SOLID GEOMETRY

(Time, 3 hours.)

	Marks.
1. Define solid, inclination of a plane to a plane, pyramid, frustum of a cone, tetrahedron, parallelopiped, and icosahedron.	10
2. If a solid angle be contained by three plane angles, any two of these are greater than the third.	10
3. Any three straight lines which meet one another, not in the same point, are in one plane.	11
4. The plane angles which contain any solid angle are together less than four right angles.	11
5. A metallic right cone, base a inches radius, height b inches, is converted into a sphere. What is the diameter of the latter?	11
6. What portion of the surface of the earth is contained between the parallel 30° and 60° north latitude?	11
7. What is the weight of a metallic hollow sphere, outside diameter 8 inches, thickness 1 inch, specific gravity of metal 6.5?	11

SPHERICAL TRIGONOMETRY.

(Time, 3 hours.)

	Marks.
1. Show that $\cos a = \cos b \cos c + \sin b \sin c \cos A$ and $\cos B = \cos C \cos a + \sin C \sin a \cos B$ and $\cos C = \cos A \cos b + \sin A \sin b \cos C$.	25
2. Deduce one of Napier's analogies.	25
3. Show that $\sin^2 \frac{1}{2} A = \frac{\sin (s-b) \sin (s-c)}{\sin b \sin c}$.	25
4. In a spherical right triangle $A = 100^\circ$ and $a = 112^\circ$; solve the triangle.	25
5. In a spherical triangle $A = 95^\circ 38'$, $C = 97^\circ 26'$, $b = 64^\circ 24'$; solve the triangle.	25

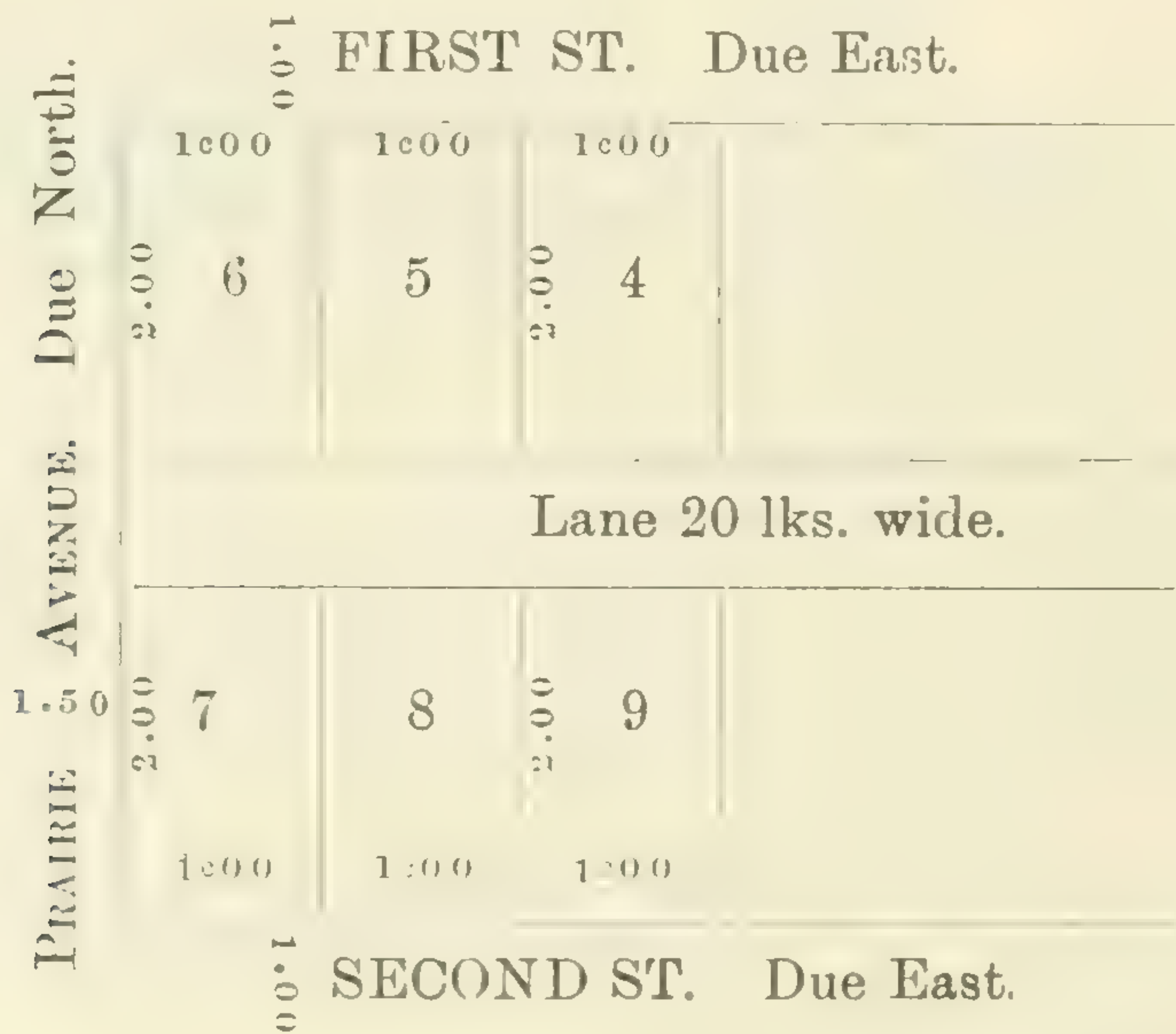
AREAS.

(Time, 3 hours.)

	Marks.												
1. Compute the area by the method of latitudes and departures, first "balancing" the survey													
<table><tr><td></td><td><i>c</i></td></tr><tr><td>S. $69^\circ 15'$ E.</td><td>7.06</td></tr><tr><td>N. $37^\circ 15'$ E.</td><td>5.93</td></tr><tr><td>N. $39^\circ 30'$ W.</td><td>6.00</td></tr><tr><td>S. $57^\circ 45'$ W.</td><td>4.65</td></tr><tr><td>S. $30^\circ 00'$ W.</td><td>4.98</td></tr></table>		<i>c</i>	S. $69^\circ 15'$ E.	7.06	N. $37^\circ 15'$ E.	5.93	N. $39^\circ 30'$ W.	6.00	S. $57^\circ 45'$ W.	4.65	S. $30^\circ 00'$ W.	4.98	40
	<i>c</i>												
S. $69^\circ 15'$ E.	7.06												
N. $37^\circ 15'$ E.	5.93												
N. $39^\circ 30'$ W.	6.00												
S. $57^\circ 45'$ W.	4.65												
S. $30^\circ 00'$ W.	4.98												
2. Express the conditions necessary for a closed survey by two equations. (a) And from them show what missing data in a survey can be supplied. (b) How does the supplying of missing data in a survey affect "balancing" the survey?	20												
3. If in the above survey the chain was one link too long, what is the correct area?	20												
4. A quadrilateral measures 15, 16, 17 and 18 chains, and one of the diagonals 22 chains; find the area.	20												

AREAS.	
(Time, 3 hours.)	Marks.
5. In a triangle $AB=10^{\circ}24$, $BC=12^{\circ}64$ and $CA=13^{\circ}04$. The azimuth of $AB=0^{\circ}0'$. What is the azimuth and length of the line starting at 2 chs. from A on AB which bisects the triangle?	20
6. What is the length of the shortest line that divides the above triangle in the proportion $2:3$?	20
7. In a kite-shaped half mile track the tangents diverge at an angle of 60° . The track is 33 ft. wide, the half mile 3 ft. from the inner side of track; what is the area of the track?	20
8. What is the length and azimuth of the line that will bisect T. 4 R. 6 W. of 2nd I. M., the dividing line beginning at the S. E. corner of sec. 1?	20
9. In a triangular field $AB=48^{\circ}00$, $BC=42^{\circ}00$, $CA=30^{\circ}00$; required to part off 31.175 ac. by a straight line passing through a point P ; PD , drawn parallel to AC , being $6^{\circ}00$, and D on BC distant $18^{\circ}00$ from C . What is the length of the dividing line?	20

DESCRIPTIONS.	
(Time, 3 hours.)	No. of Marks.
1. In a registered and certified plan the measurements and bearings of all lines are given; each lot is numbered and shown as being one chain wide and two long. Make a description of one of the lots for a deed of bargain and sale.	20
2. The following is a part of a registered and certified plan; the owner of Lot No. 7 sells 40 feet frontage on Second Street, and adjoining Prairie Avenue, and this width to extend to the lane.	20



Make a description by metes and bounds of the part sold.

SESSIONAL PAPER No. 25a

	Marks.
3. The owner of the S. E. $\frac{1}{4}$ Sec. 4, Tp. 5, R. 4 W. of 2nd I. M., sells the southerly 100 acres thereof, the boundaries to be the southern boundary of the $\frac{1}{4}$ Sec., the eastern and western ones, and a line parallel to the southern boundary. Give description of the part sold, by metes and bounds.	20
4. Through Sec. 21, Tp. 8, R. 6 W. of 2nd I. M., flows a stream westward. The owner of the section sells the eastern half (two $\frac{1}{4}$ sections), but reserves the privilege of "swelling" the water and of access along the banks of the stream for the purposes of repair of banks in that half of section 21. Make description of part sold for a deed.	20
5. Draw up a settler's statutory declaration of occupation.	10
6. Draw up an assumed evidence, and, which is of value, of a witness regarding the lost post of a section corner, which it is desired to re-establish.	10

ASTRONOMY.

(Time, 3 hours.)

	Marks.
1. Define declination, right ascension ; celestial latitude and longitude ; solar, mean and sidereal time ; parallax and azimuth.	12
2. Explain fully the equation of time and its variations. A graphical representation may be given.	12
3. What is the true altitude of Polaris at transit on the 3rd base line, range 16 W. of 2nd I. M., on June 21, 1904 ?	12
4. What is the azimuth of Polaris at eastern elongation for place and date of question 3 ?	12
5. What is the standard time (referred to meridian 105°) of elongation of Polaris in question 4 ?	13
6. What is the standard time of sunset for place and date of question 3. Refraction and semi-diameter to be considered.	13
7. At place and date of question 3, what is the altitude of a star, declination 35° 16', when crossing the prime vertical ?	13
8. What is the local mean time of the transit of Polaris, upper culmination at place and date of question 3 ?	13

ASTRONOMY.
(Times 3 hours.)

9. On May 31, 1904, on the third base line, S. W. corner of sec. 3, range 16, W. of 2nd I. M., the observed altitude of the sun's upper limb was 29° 47' in the forenoon, a watch showing 7^h 42^m; what was the watch correction, and what was the time of observation, standard time? 20
10. In question 9 the horizontal circle reading on the sun's centre was 317° 23', and on the reference object 18° 32'; what was the azimuth of the latter? 20
11. At the place and date in question 9, when the hour angle of Polaris was 4^h 24^m, what was its azimuth? 20
12. At noon July 1, 1904, at the 2nd I. M., a sidereal chronometer is 1^m 34^s fast on local sidereal time. It has a daily losing rate of 1^s.4. How much is the chronometer fast on local mean time of meridian between ranges 19 and 20 W. of 2nd I. M. on July 20, 4 P.M.? 20
13. The apparent altitude at upper transit of a star was 48° 15'. and at lower transit the apparent altitude 43° 40'. What was the latitude of the place? 20

FULL EXAMINATION FOR ADMISSION AS SURVEYOR.

ALGEBRA.
XXXI.

(Time, 3 hours.)

	Marks.
1. Find the H. C. F. of $6x^5 - 4x^4 - 11x^3 - 3x^2 - 3x - 1$ and $4x^4 + 2x^3 - 18x^2 + 3x - 5$ and the L. C. M. of $x^2 - 4a^2$, $(x + 2a)^3$ and $(x - 2a)^3$	11
2. Solve $\frac{6x + 1}{15} - \frac{2x - 4}{7x - 16} = \frac{2x - 1}{5}$	11
3. At what time between one and two o'clock is the minute hand of a clock exactly one minute in advance of the hour hand?	11
4. Solve $x + y + z = a + b + c$; $bx + cy + az = cx + ay + bz = a^2 + b^2 + c^2$	11
5. There is a number consisting of two digits; the number is equal to seven times the sum of its digits, and if 27 be subtracted from the number the digits interchange their places; find the number.	11
6. Extract the cube root of $21\sqrt[3]{6} - 23\sqrt[3]{5}$	11
7. Solve $\frac{x + 3}{x \times 2} + \frac{x - 3}{x - 2} = \frac{2x - 3}{x - 1}$; $3^{x+1} + 9x = 810$ $2\sqrt{x} + \frac{2}{\sqrt{x}} = 5$; $\frac{a}{a+x} + \frac{b}{b+y} = 1$; and $x + y = a + b$	12
8. A line of given length is bisected and produced; find the length of the produced part so that the rectangle contained by half the line and the line made up of the half and the produced part may be equal to the square on the produced part.	11
9. The product of two numbers is 750, and the quotient when one is divided by the other is $3\frac{1}{3}$; find the numbers.	11

SESSIONAL PAPER No. 25a

PLANE GEOMETRY.

(Time, 3 hours.)

	Marks.
1. Prove geometrically $(b + a)(b - a) = b^2 - a^2$.	19
2. Describe a square that shall be equal to a given rectilinear figure.	18
3. If a straight line be divided internally in medial section, and from the greater segment a part be taken equal to the less, show that the greater segment is also divided in medial section.	19
4. Prove that the sum of the squares on the sides of a parallelogram is equal to the sum of the squares on the diagonals.	19
5. Prove that the angle in a semicircle is a right angle, the angle in a segment greater than a semicircle is less than a right angle, and the angle in a segment less than a semicircle is greater than a right angle.	19
6. Describe an isosceles triangle having each of the angles at the base double the third angle.	19
7. In a triangle ABC the inscribed circle touches BC at D , show that the circles inscribed in the triangles ABD and ACD touch one another.	19
8. Prove that similar triangles are to one another in the duplicate ratio of their homologous sides.	18

SOLID GEOMETRY.

(Time, 3 hours.)

	Marks.
1. Show that if two straight lines are parallel and one of them perpendicular to a plane, the other is also perpendicular to the plane.	10
2. Give a geometrical construction for drawing a straight line equally inclined to three straight lines which meet in a point but are not in the same plane.	11
3. Find a point in a given straight line equally distant from two points in space.	11
4. Of the three plane angles that form a trihedral angle, any two are together greater than the third.	10
5. Show that the sum of the plane angles that form a solid angle is less than four right angles.	11
6. Prove that two triangular pyramids whose bases and altitudes are equal, are equal in volume.	11
7. Find by a geometrical construction the centre of the sphere which passes through the angular points of a triangular pyramid.	11

SPHERICAL TRIGONOMETRY.

(Time, 3 hours.)

Marks.

1. Derive the equations: $\sin a \cos B = \sin c \cos b - \cos c \sin b \cos A$;
 $\sin A - \cot B = \sin c \cot b - \cos c \cos A$; $\cos^2 \frac{1}{2} A = \frac{\sin s \sin (s-a)}{\sin b \sin c}$
2. State Napier's rules, and apply them to the solution of a triangle in which the two sides containing the right angle are given.
3. In a right angled triangle, given : $a = 58^\circ 20'$, $b = 132^\circ 40'$, $C = 90^\circ$; solve the triangle.
4. Given two sides and the included angle of a triangle, show how the triangle may be solved by means of a perpendicular.
5. Find the distance between two points on the earth's surface whose latitudes and longitudes are : $51^\circ 20'$ N. and 10° W., and $31^\circ 10'$ N. and $64^\circ 40'$ W., respectively, the radius of the earth being 3956 miles.
6. Through a point on the line of intersection of two planes two right lines are drawn, one in each plane, one making an angle of 50° and the other 65° with the line of intersection ; the angle between the two lines is 70° ; find the angle between the two planes.
7. In a spherical triangle on the earth's surface $A = 60^\circ$, $B = 75^\circ$, and $c = 22^\circ$; find angle C and the area of the triangle in square miles.

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AREAS.

(Time, 3 hours.)

Marks.

1. The following are the notes of the survey of a quadrilateral piece of land :

Stations	Bearings.	Distances.
1	N. $43^\circ 20'$ E.	13.50 chains.
2	S. $48^\circ 20'$ E.	9.80 "
3	S. $22^\circ 40'$ W.	14.70 "
4	N. $47^\circ 00'$ W.	15.10 "

20

Find its area by the method of latitudes and departures, first balancing the courses.

2. A piece of land 15 chains in width, with parallel sides, is crossed by the right of way of a railway on a 6° curve (rad. = 955.37 ft.), the tangent to the centre line making an angle of 40° with one of the boundaries at the point of crossing ; find the area of the right of way across the piece of land, its width being 1 chain.
3. The sides of a triangular piece of land are : $a = 12$ chains, $b = 10$ chains, $c = 15$ chains ; find the position of the line drawn through the middle point of the perpendicular to c from the opposite angle and bisecting the triangle, the line cutting the sides b and c .
4. Divide the triangle of question 3 in the ratio 1 : 3 by the shortest possible line.
5. A line drawn from one extremity of the diameter of a semi-circle bisects its area ; find the angle which it makes with the diameter.

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SESSIONAL PAPER No. 25a

AREAS (2nd paper.)

(Time, 3 hours.)			Marks.
6. In a closed rectilinear figure what conditions must be fulfilled by the latitudes and departures? Show how these conditions are used to supply omissions in the survey of such a figure. Show this application to the case in which two bearings were omitted.			20
7. The following are the notes of a survey :			
Stations.	Bearings.	Distances.	
1	27° 34'	
2	115° 41'	10·43 chains.	
3	196° 53'	
4	285° 17'	12·76 "	20
Supply the lengths of the two omitted courses, the bearings being reckoned from the north in the direction E.S.W.			
8. Find the azimuth of the line starting from the S.E. corner of Section 1, Tp. 21, R. 28 W. of 3rd. Meridian and cutting off 160 acres from that section.			20
9. Find also the position of the line starting from the S.W. corner and bisecting the remainder of the section.			20
10. A triangle whose sides are a, b and c is bisected by a line making a given angle with the side c ; find the length of the line and the positions of the points in which it cuts the sides of the triangle.			20

ASTRONOMY.

(Time, 3 hours.)		Marks.
1. Explain fully the equation of time and its variations, illustrating by diagrams.		12
2. Deduce the rules for the reduction of mean to sidereal time, and conversely. At a place in latitude 44° 10' and longitude 76° 30' W. the standard time on May 12th, 1891 is 9 h. 50 m. P.M. ; find the sidereal time.		13
3. At the same place and date find the standard time when the apparent altitude of the star Canis Minoris is 21° 34', when west of the meridian.		13
4. At the same place find the standard time of transit of the sun's western limb on June 1st. 1891.		12
5. Find standard time of sunrise at Ottawa on June 1st. 1891.		13
6. Deduce a formula for finding the latitude by an altitude of Polaris.		12
7. Derive a formula for reducing circum-meridian altitudes to the meridian, for determining latitude.		12
8. At a place in latitude 55° 30' N. and longitude 105° W. find the azimuth of Polaris at western elongation on June 15th 1891. Find also the standard time of elongation.		13

ASTRONOMY (2ND. PAPER.)

(Time, 3 hours.)

Marks.

- | | |
|---|----|
| 9. Describe fully the method of observing and reducing an altitude of the sun to find the azimuth of a line. | 14 |
| 10. Show when the best time is for observing an altitude of the sun for time, latitude and azimuth. | 14 |
| 11. The altitude of a star on the prime vertical is 32° , and its declination 40° ; find the latitude of the place. | 14 |
| 12. Find sidereal time of western transit of the star Arcturus across the prime vertical at Ottawa on June 20th, 1891, and its apparent altitude at the time of transit. | 14 |
| 13. Describe methods of determining longitude on an exploratory survey. | 14 |
| 14. At a place in latitude $51^{\circ} 51'$ N. and longitude 7 h. 45 m. W. the bearing of the sun's southerly limb was observed with a compass to be N. $80^{\circ} 5'$ E. at 7 h. 32 m. 20 s. A. M., watch time, the watch correction being—40 s. on local mean time ; find the variation of the compass, the sun's declination being $6^{\circ} 30' 04''$ N. and the equation of time + 1 m. 39.2 s. | 15 |
| 15. An observation for time is made on the 4th. base line at the 3rd Initial meridian and the error of the chronometer found to be 17 m. 36.5 s. fast, and a daily losing rate of 3.5 s. Two weeks subsequently on the same base line, after producing it westward, another observation for time is made and the chronometer found to be 23 m. 18.5 s. fast. Give position on section line where the latter observation was made. | 15 |

INDEX

	PAGE.
Report of Surveyor General..	3
Appendix No. 1. Schedule of Dominion Land Surveyors employed from July 1, 1903, to December 31, 1903..	13
Appendix No. 2. Schedule of Dominion Land Surveyors employed from January 1, 1904, to June 30, 1904..	18
Appendix No. 3. Schedule showing miles surveyed and cost of same.. . . .	21
Appendix No. 4. List of Dominion Land Surveyors supplied with standard measures..	23
Appendix No. 5. List of Yukon Surveys confirmed..	24
Appendix No. 6. Miscellaneous Surveys in Yukon..	26
Appendix No. 7. Statement of work executed in the office of the Chief Draughtsman..	27
Appendix No. 8. Statement of work executed in the Survey Records office..	27
Appendix No. 9. " " " Photographic office... ..	28
Appendix No. 10. " " " Lithographic office... ..	29
Appendix No. 11. Descriptions of townships surveyed :—	
East of 1st Meridian—Ranges 8, 9, 10, 11, 12, 13 and 14..	32
West of 1st Meridian—Ranges 1, 3, 9, 10, 11, 22, 24, 25, 30, 32 and 33..	38
West of 2nd Meridian—Ranges 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29..	42
West of 3rd Meridian—Ranges 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28..	92
West of 4th Meridian—Ranges 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 29 and 30.....	192
West of 5th Meridian—Ranges 1, 2, 3, 4, 5, 6, 7, 8, 25 and 26	272
West of 6th Meridian—Ranges 4, 7, 8, 9, 12, 23, 24, 25, 28, 29 and 30..	287
East of Coast Meridian... ..	289
Appendix No. 12. Report of P. R. A. Belanger, D.L.S... ..	291
Appendix No. 13. " J. J. Dalton, D.T.S... ..	294
Appendix No. 14. " Louis E. Fontaine, D.L.S... ..	297
Appendix No. 15. " Ernest W. Hubbell, D.L.S... ..	298
Appendix No. 16. " A. W. Johnson, D.L.S... ..	301
Appendix No. 17. " G. J. Lonergan, D.L.S... ..	303
Appendix No. 18. " Jos. E. Ross, D.L.S... ..	305
Appendix No. 19. " Arthur Saint-Cyr, D.L.S... ..	307
Appendix No. 20. " J. N. Wallace, D.L.S... ..	309
Appendix No. 21. Examination papers for Dominion Land Surveyors.. . . .	312

